Pudney & Russell, 79 John-Street, N. Y.

CONTENTS OF VOLUME I.

THE

Monthly Nautical Magazine

AND

QUARTERLY COMMERCIAL REVIEW.

Vol. I.] OCTOBER, 1854. [No. 1.

INTRODUCTORY.

Two full centuries of time have rolled forward the wheels of maritime history since the earliest English writer on naval improvement impressed his thoughts on the printed page of nautical literature. The first man to make his mark in the blank book of commercial science was no less celebrated an author and profound thinker than Sir Walter Raleigh. His efforts to awaken an interest in the improvement of the English Navy, about the period of 1650, which was at that time evidently inferior to the shipping of the merchant service in many essential sea-going qualities, appear to have laid the keel of that almost exclusive treatment of the *naval* branch of nautical architecture, which has been pursued by all later writers of the Old World.

It was no less a bold than favorite maxim of this heroic man —and still cherished by the British power—that *naval pre-eminence* secures universal dominion over the *wealth* of the world: since whoever commands the *sea*, commands commerce; and whoever commands the *commerce* of the world, commands its *riches*, its *liberties*, and its *happiness*.

To maintain the sovereignty of the seas, and to clench the British grasp of the naval sceptre, has for more than 200 years constituted the motive of every endeavor, on the part of that insular power, which has ever been made to improve the theory or practice of naval architecture in Great Britain. The beams

of royal favor have ever shed their fostering influence around the dock-yards of England from the earliest days of Sir Walter Raleigh, when whole fleets were bound to lower topsails at the arrogant bidding of a single pennant, down to the present time, when that nation boasts the most powerful and effective naval armament on the waters of the globe.

It has been thought, and we have no doubt sincerely, too, that, happily for the well-being of mankind, the bloody contention on flood and field for the mastery in commercial enterprise has passed away. The peaceful pursuits of laudable commerce are alike open to all; trade is free, and seamen's rights are guaranteed. The keels of rival shipping unmolested plough the fluctuous tides of channel and of bay, where once the smothering wreaths of battle-smoke stifled the Briton at his gun, as the arching heavens echoed with the booming cannon's roar, while, in dread fatality,—with bulwarks battered, and decks dyed in gore,—he moored whole fleets below, to ride in wreck the gloomy soundings of the deep. At last war is swallowed up; the spirit of humanity has gone abroad over the earth. Be it so. But let us ask the squadrons of the Baltic and the Black Sea their mission on the waters of bleeding Europe. Alas! for the grateful prosperity of peaceful intercourse with nations, history is but a varied repetition of history—of sages and savages alternating at the helm of events! The right arm of England has revived her ancient maxim.

Far otherwise has been the policy pursued by the spirits of the Western World. Imbued in an equal degree with the genius of maritime adventure, the United States of America have ever looked forward to a just and generous, if not an enlightened, policy for securing her abundant share of commercial rewards. Content to earn by democratic industry what monopoly could not retain by avaricious wars, she has thrown down the glove on the theatre of navigation, determined to conquer by outdoing the world. Owing to the *superior qualities* of our merchant ships, they have been fast supplanting the mercantile navies of every other State, and are rapidly becoming the carriers for every clime. The secret of our maritime success is found inherent in wiser commercial maxims than royal admirals set down

for European guidance—that ever works to win—true as the needle to the pole—as true of men as of ships—the republican idea, *that every ship should depend upon her own bottom.* It had been thought in Europe, by the minions of despotic rule, that war vessels only were worthy of being endowed with royal qualities of *velocity;* and it was reserved for American ship-builders, in the honorable production of messengers of peace, to teach the haughty theorists over the water the very first principles of ocean prowess. Maintaining good-will to all the world, and adapted to single sailing, our ships wait for no attending convoy to guard with frowning batteries the lagging movements of a dull voyage. Give us but fair play in port, and safety reigns at sea.

It will be obvious to the glance of the practised thinker, that *the present is not the age* longer to rest confined to the slow and uncertain developments of knowledge, which are the necessary consequences of remaining restricted within the bounds of an ever-commencing, ever-repeating, because never-communicated, or, at the best, imperfectly communicated experience. It is but too plainly manifest that we, as a profession, *have no fulcrum for improvement.* Beyond the margin of individual experience, and the ever-ready aid of genius, the science of commercial operations rests upon no firmer foundation than the globules of time's passing stream. The toils of laborious induction and hard-earned wisdom, in the yard and on the deck, fade forgotten in the closets of human memory, and the most invaluable knowledge dies with the brain that impelled the daring navigator or the skilful mechanic. Truth that is born to-day is permitted to perish to-morrow, and no record appears in memorial slabs to teach future inquirers the intrinsic qualities of departed thoughts.

If the ship-builders and commercial men of the United States will consider that every other interest, whether financial or agricultural, mechanical or intellectual, has long since adopted that more substantial system of *journalizing knowledge,* which is found essential to preserve the footprints of progression in the least of the arts or sciences fresh on the *printed page,* while time drifts the dust of ages upon all the other paths of man, it will be conceded that we possess no measure of anticipation that

can justly and sufficiently estimate the advantages, either in a mechanical or financial view, which would result from such a systematical pursuit of marine architecture by the maritime time and talent of our country.

Much as has since been done to accomplish the end sought to be obtained for her merchant fleets by the general warmth of fostering legislation, results have shown that British builders are still *following* in the wake of improvement inaugurated in the *New World.*

In 1838, England established a royal mail steamship communication with the United States, determined to be first in harnessing the all-powerful motor of steam to the marine car of national aggrandizement on the high seas, as well as to secure its aid to add invulnerable strength to their naval arm. About ten years after, our own country followed in establishing regular lines of ocean steamers, which are now connecting us with all parts of the world. The astonishing performances of steam vessels on the ocean, and the sudden discovery of a rich coasting trade to California, excited new developments in ship-building, such as the world never saw before, and such as the inventor of the frigate *Peter Pett*, of Chatham, England, could never have dreamed of. He was the first ship-builder "who made a trial of making a vessel that would sail swiftly," in 1646, and caused the fact of his being the inventor of the frigate to be recorded on his tomb.

The ship-builders of our country, having abundantly demonstrated by the unsurpassed feats of American clipper ships, by canvas or steam, that the direct road to commercial superiority lies in the *model*, rather than the number of ships, or the mode of their propulsion, has provoked an unexampled spirit of rivalry in the bosom of the "ancient mariner" of the Transatlantic Islands, and added no inconsiderable weight of conviction to the minds of England, and English statesmen, that the present fearful rate of advance in American maritime progress bids fair to *divide* with them the long-enjoyed "sovereignty of the seas." With this brief outline of maritime history in view, the reader will scarcely wonder to learn that, although British ships are now being built under the best adjustment of tonnage rules

extant, a still more favorable revision of their code is now receiving earnest consideration in Parliament. The pressure of necessity is so urgent for removing every possible restriction on the incentives for producing superior models and workmanship, that it is proposed to obtain the consent of the chief commercial nations to a wise and beneficent *international tonnage law.*

It becomes an interesting question to every American mind whether the mechanical and commercial genius of the United States, which has nothing to fear when the terms are equal, but which now are, as they have long been, fearfully against us—as is but too clearly manifest in the workings of our warping tonnage laws—shall, for the future, be able to contend successfully, as heretofore, with a wealthy commercial power, now thoroughly aroused to the vital importance of preserving a position on the sea, which is essential to the independence of an insular nationality, of the first class in the scale of nations, and which can only be done by possessing a large maritime population, which can be insured only by maintaining an immense mercantile navy; which, again, as has been proved by the nautical contest with this country, must ever be *completely dependent on the qualities of the ships that compose it.*

But a more deeply interesting question will agitate the tranquillity of every American bosom, whether we are *willing* to permit *any obstacle*, of whatever name, to interpose even doubtful barriers to any enterprise whatever, undertaken by American navigators upon the face of the deep. To both of these questions the ship-builders of the United States are expected to furnish answers in the work of their hands and heads. It is in order to enable them to insure a favorable solution to these problems, which are fairly before us for future demonstration, by furnishing the *basis* for advancing to a more elevated position for commanding the future excellences of our commercial fleets, with the desire that our prosperous country shall continue to stand unrivalled in shipping in the waters of the globe, that this Press is dedicated to the maritime interests of the United States.

The Editors of this work, in common with intelligent men of various professions in commercial life, have long perceived the

advantage of cultivating a closer intimacy with the revelations of *practical* wisdom, as taught by the *results* of mechanical and nautical genius, manifested in the diversified application of American *skill* in manufacturing *vessels.* When we lift the veil from fact, none can be at a loss to discover that the present peaceful contest is one of *intelligence,* no less than genius and enterprise ; and the exigencies of the age demand an enlightened cognition of every advantage placed within our reach. The progressive spirit of the human mind brings this truth to our doors—that superiority lies forward in improvement ; and improvement defines a field too vast for the compass of a single day, too complex for the calibre of a single mind.

It is to the *qualities* of our vessels, and the *skill* of American navigators, we may proudly refer the unrivalled rise of American commerce. The American ship-builder cannot be excelled in the construction of the *model,* whilst his workmanship is second to none in the extensive orbit of nautical mechanism.

While thus the practical experimenters of the New World have been applying the results of past experience to each successive model for commercial purposes, resolving, by the aid of genius alone, the multifarious problems of nautical art in the busy workshops of the private yard, the Old World, with the exception of England, has been content to revise their naval establishments, propound impracticable theories of fluid resistance, and devise mechanical methods for draughting the bodies of ships. From the early part of the present century, the naval oracles of England have agitated improvement in architecture and design, and much study has been expended to perfect the qualities of the British Navy. To this end, the first school of naval architecture was established in 1811, and continued for twenty-one years, for the end and object of introducing a " better and more skilful description of shipwright officers in His Majesty's royal dockyards." In 1830, in consequence of having constructed a superior vessel of war, the *Columbine,* for Her Majesty's service, Sir William Symonds was appointed to the office of Surveyor of the Navy, and left unrestricted in the choice of his *dimensions* for the future fleets of Britain. In 1836 the attention of English statesmen was directed to their mercantile marine, and a foster-

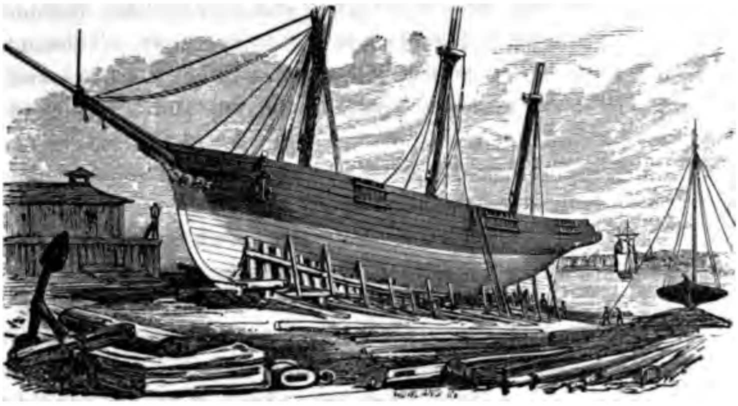
ing revision of the tonnage code was established to promote reform in the ***dimensions*** and *model.*

Relying upon the lively intelligence and generous appreciation of all whose interest is bound up in the cause which this Journal is offered to advance, its proprietors have not hesitated to launch forth upon the enterprise of applying the pen and pencil to the cultivation of marine architecture in the United States.

Coming fresh from the various departments of nautical mechanism, and intimately connected with its daily evolutions, the conductors of this publication will avail themselves of every means within their reach to secure efficiency and strength in their efforts to advance the knowledge and prosperity of mechanics and mariners, owners and shippers, and every class of our fellow-citizens whose pleasure, wealth, or security is enlisted in the excellence of our shipping, and the elevation of our maritime renown.

In conducting this Journal, therefore, it will give us pleasure to furnish a niche where every builder, engineer, nautical or commercial man, can communicate his knowledge to the world of mankind, and to a class of readers who will be especially interested in all that can be said in the several departments of maritime science. The pages of this Magazine shall be kept open to all, and all are invited to contribute to lay the foundation for such a press of information on the mass of subjects within the ample scope of our design as has never yet been offered to practical men, and which shall be our proudest aim to furnish. We shall always be ready to publish engraved illustrations of all new inventions in our line, and present them to the notice of our readers.

Mechanical Department.



THE SHIP-BUILDERS OF THE UNITED STATES.

It is to this class of citizens that the United States owe much of their commercial greatness. The time has passed when the builder is chargeable with the faults of the vessel he builds beyond the proportion of his influence in determining the principal dimensions by which she is built. *But if* there was a time (it has now gone by) when the mechanic could escape the responsibility consequent upon the premature loss of an unstable or a disproportioned vessel, the history of 1853 and '54, with its long list of shipwrecked vessels and fond hopes, have rendered it absolutely necessary that confiding passengers, as well as the crews of vessels, should be protected against the deleterious influences growing out of the present law for the measurement of vessels.

That the spirit of the age is progressive, is not less manifest in the annals of commerce than in the history of other pursuits within the orbit of civilized life, and yet we see that the relics of barbarism are more rapidly disappearing in every other department of human industry than in commerce; this is a truism which ship-builders only can comprehend. The people of the United States have freed themselves from the habiliments of tyranny and oppression in most of the departments of jurispru-

dence except that of commerce, while in this they remain subject to the laws enacted when England had her Protectorate; and, notwithstanding the obliterating footprint of time, the destroyer has shown the importance, as well as necessity, of reform; yet this class of industrial representation, having never enjoyed the wholesome influence of an independent press, have continued to labor on with that indomitable energy, so signally developed in maritime mechanism, without a chronological record of the past to inspire new hopes for the future.

It is, indeed, remarkable, and redounds much to their credit, that they should be able to bear up and make progress against the tide of unequal legislative restrictions, while their transatlantic neighbors enjoy the advantages of an enlightened policy in commercial legislation on the great question of tonnage. An impartial qualified observer (if such a one could be found) would be able to judge with what feelings the American ship-builder contemplates the unequal contest that has been, and is still being, waged in the great commercial race, demanding superior ships at the bidding of his fettered genius, bound by the unwise prerogative of those for whom he provides the elements of riches and honors. But when we add to this the well-known prejudices and hereditary maxims, the hoary traditions of art, it must be apparent that a degree of courage, determination, and fortitude, combined with rare skill and judgment, not demanded, nor yet required by any other science or art, at the hands and head of every builder, who would wring reluctant laurels from the fields of his legitimate pursuits.

INLAND NAVIGATION.

MODELLING SAIL VESSELS FOR THE LAKES.

To achieve utility in the production of any class of shipping, it is necessary to consider carefully at least three grand governing conditions, which seem to demark the main outline of adaptation to commercial purposes. These elementary points may be defined as the *nature of the trade and cargo to be carried*; the *extent* and *depth* of the waters to be *navigated*; and the *mode of propulsion* adopted. Other considerations of detail will

likewise enter into the theoretical design, and the points are not few which should be definitely settled with regard to the manner of *building, rigging,* and *manœuvring* the vessel, before the model is undertaken; for we should never lose sight of the *basis* of all success in ship-building, to wit: that the ship, like a watch or a locomotive, *is a unit in itself;* one part must be studied with reference to another, and the performance with reference to them all. The strongest built and most costly finished ship is, after all, best prepared to carve her fortunes on the deep, when the designing mind and executing hand have been united in the same person directing the operations from keel to truck; and, we may add with emphasis, that the commander's duty is to develop those designs in using the ship.

Having arranged our investigations to our mind, we shall discover the corresponding model looming up to our inner vision, and appearing in all its proper proportions and *true shape.* It is with our mental eye we should first view our incipient architecture afar off, and examine it well before we conclude to tow it into port. After we have submitted the distant *ideal* vessel to the ordeal of nautical criticism, as an intruding stranger advancing to receive our sympathy and paternal regard, we are prepared to adjust its form to the measure of *capacity* required. The work of "making the model" is now fairly under way, and we should grasp its configuration fast before our mind's eye, until the labors of the hand have produced it tangibly before us. Our task is not merely to fashion a *block* of *wood* into the likeness of something that floats the commercial element, but to produce the exact counterpart of the living shapes which genius has configured in the "lofts" of the mind.

By means of calculations, which, if not familiar to the modeller, may be found explained in Griffith's Treatise on Marine Architecture, it is by no means difficult to approximate the requisite capacity for cargo, or space for passengers. Tonnage, by dimensions, is no guide to determine the freighting capacity, being a mere romance of legislation; the displacement must be the basis of our approximation. We will leave some remarks on this subject to another article, adding only that it is best not to be trammelled by dimensions, arbitrarily fixed, before the

model is begun. The length, breadth, and height of load-line may be so determined that it shall contain the necessary buoyancy to float the vessel and cargo at any given exponent of capacity. Beyond this, we should have ample scope for the eye and the instrument.

With this brief sketch of our manner of producing models, we will take a trip to the lakes, and proceed to consider some of the peculiar points of vessels adapted to commercial purposes on the inland seas. On these waters, by far the most interesting of any basins on the globe, the chief staples of trade are furnished by the agriculturist and the lumber manufacturer, and consequently demand a natural fitness in the build of vessels suitable for the transportation of each commodity, or, in other words, a model adapted to the *trade.* Thus, lumber, being a cargo which can safely be carried on deck, requires for its transportation a shoaler craft, or one with less depth, relatively, than a cargo of produce, which must be stowed under decks; and neither demands so much depth as vessels require which are engaged in freighting cotton or light goods. There can be no wisdom in loading lumber vessels with height of topside sufficient to stow all the cargo in the hold, for we would thereby impair the carrying properties, and lose in sea-worthiness. Low-deck vessels are, therefore, most profitable for this trade, and may carry a large proportion of their cargo on deck. Cargoes which require to be protected from the weather may be classed as *heavy* and *light* freights; the former requires displacement, and the latter space or stowage. High-decked vessels, of larger capacity, are found best calculated for heavy freighting, and we do not hesitate to state that our observation intimates that the most profitable sail vessel built for freighting oats, or other light cargoes of perishable goods, would be constructed with two decks—a main-deck and a spar-deck. The main-deck, at the height of the load-water line, and the spar-deck seven or eight feet above, with light topsides, flush spar-deck, with cabins on the main-deck lighted from the sides. At present, the sail craft on these lakes have but one deck.

But the *draught* of water ought, perhaps, to exercise the greatest influence in the designs of lake shipping. Many of the

harbors and rivers afford the navigator no more than eight feet of water, and but few can command ten feet, or more, over the bars; and on the noted "St. Clair Flats," the channel varies in depth from eight to eleven feet from year to year, and in the lowest stages of the lakes, the water has been known to stand even below six feet. Among the most dangerous incidents in the history of lake navigation, the inland mariner classes the "making" of those shallow harbors, "*pounding over the bar,*" with a heavy sea running between two breakwaters, or piers, entering often literally the very jaws of destruction. A *light draught* of water is, therefore, one of the most important points to secure in this class of vessels.

But, strange to say, rare have been the instances in which measures have been taken to accommodate the displacement of vessels to so plain a necessity. Immense sums are expended every year, together with a ruinous loss of time, where navigation is open but eight months in the year to "lighter" vessels over the "flats," that ought to pass clear. We may account for this in the prevailing notion that depth of hold and freighting capacity are the same terms, which is a mistake. The hope of receiving the aid of the General Government to build, dredge, and maintain suitable harbors on the Northern Lakes, has, no doubt, deterred the adoption of shoaler models.

It is, however, true that the relative length has been extended quite to the verge of practical limits, in some cases, partially to secure the advantages of light draught; and this feature, in connection with the general adoption of centre lee-boards, with very little outstanding keel, constitutes the distinguishing characteristics of the shipping on the American Lakes. There are schooners, and, indeed, every variety of rig here, the largest about one hundred and forty feet long, twenty-six to twenty-eight feet beam, and from ten to twelve feet hold. A few vessels are wider, relatively. The unparalleled *length* of these vessels endows them with remarkable fleetness, when compared in their performances with *shorter* vessels of the same shaped ends. But while still greater advantages of light draught may be obtained, by increasing the breadth, as well as the length, it shoul not be forgotten that the *lateral resistance* will be diminished,

and the vessel will require more strength in construction. This follows, because in such case the vessel will have increased stability, and consequently carry more sail; the *absolute* resistance will be diminished, and, of course, the speed will be improved; but, remember, the lateral resistance having been diminished by lessening the draught of water, (unless a compensating surface of centre-board is provided,) you will gain nothing in oblique courses, or, in other words, beating to windward.

It will be vain to expect that the qualities of speed *by the wind* will prove to be commensurate with the vessel's high character in free courses, or with leading winds. We say, then, that long, wide, and shoal vessels require *enormous* centreboards to enable them to sustain their reputation when working to windward. The feat of sailing by the wind is a problem of the least possible amount of *absolute resistance*, combined with the greatest possible amount of *lateral resistance*, and the largest capacity for *sail*. It is doubtful whether it will *pay* for freighting vessels, otherwise properly adapted to the navigation of shallow waters, to be qualified in the highest degree to contend with head-driving gales. Vessels built for pleasure may well claim to dispute this privilege.

In case it be not designed to increase the speed materially, when adopting a liberal breadth of beam, the exponent of displacement may be enlarged, or, in other words, the buoyancy may be augmented to advantage. But the *mode* of propulsion, or the application of sail, must be duly consulted before determining the outlines of proportion and shape, in order that the model may be adapted to the peculiar evolutions required at sea. This is a point seldom or never attended to; but we contemplate a *live* craft, and consider the *rig* as a very material instrument in developing her points at sea.

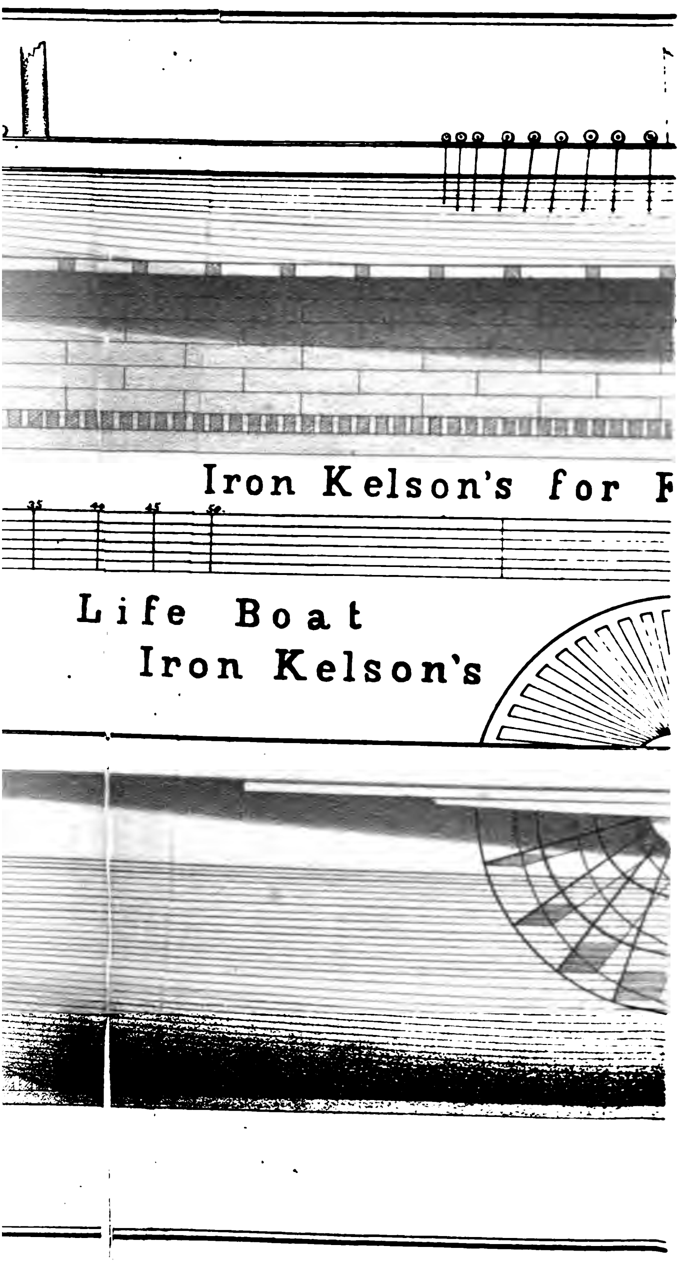
First, as regards the vessel, and her mode of propulsion or application of sail in adapting the one to the other, it may be inferred that we will assume the *stability* and *velocity*, in connection with the lateral or *side resistance*, to determine the basis of adjustment or choice. Thus it will be found that the sloop, which is the simplest of all rigs, requires the most stability; the fore-and-aft two-masted schooner comes next, then the

three-masted, and last the various rigs of square-sails, in the order of diminished beam or stability. Brigantines and topsail schooners require a large share of stability. This discrimination in favor of square-sails with moderate stability, and fore-and-aft canvas demanding greater beam, is principally with a view to the ease and safety of working ship, and to the fact that in the fore-and-aft rig the weight of canvas and spars must be borne to leeward, and consequently the wind exerts a greater depressing effort on such sails; whereas, in the case of square-sails, in their rotation around the masts, the weight of propulsory power is very little moved to leeward, and the depressing effort is the smallest possible.

If the reader is conversant with the evolutions of the fore-and-aft and square rig at sea, especially before the wind, he will discover no difficulty in assenting to the distinction here laid down; and if the nature of the navigation requires one kind of rig rather than another, it should be furnished with the corresponding model. Thus *sloops* appear best adapted for river navigation, and they require great beam, flat bottoms, round sides, and large lee-boards. The expansive basins of the North American Lakes seem particularly inviting to the *fore-and-after*, and the various modifications of the schooner rig, while the more hardy seas are reserved for stately *ships*.

There is a fulness in all this that is pleasing to contemplate, so we feel sure we are right, and consequently go ahead.

Sloops are not to be met with in our lake waters, and the fore-and-aft two-masted schooner has long been the favorite rig for vessels under 300 tons; and though we have seen fore-and-afters above 400 tons, with proportionate beam, this rig becomes too heavy; and vessels over 300 tons had better be built longer, and then adopt the three-masted rig. Of these there are various modifications, and the best has not yet been generally fixed upon. But it will be conceded by most judges, that square-rigged foremasts, especially for the larger class, must continue to command a large share of nautical approbation. It may be inferred that such great length as this rig requires is unfavorable to celerity of movement in stays, but let it be remembered that it furnishes great lateral resistance, with diminished absolute



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resistance, and far head-reaching qualities. In addition, they are furnished with two centre-boards, the after one to be raised, if necessary, in tacking ship. The adoption of two boards has followed partly as a necessity, and partly as an experiment, in adding the third mast. We may remark that they cost more than one board, and are not so effective. This rig requires fine light ends, high, sharp bow, long midship body, with increasing sheer towards the head and stern, and accumulated strength amidships. It will yet be found necessary to introduce diagonal trussing of iron on the inner surface of the frame, as upon the larger vessels on the sea-board, in lieu of the arched strakes that are now worked over the ceiling in the hold. To facilitate the evolutions of such models at sea, it is not wise to be over-anxious in securing a superabundance of lateral resistance on the ends beneath water, as this will impede the working; better depend on that furnished by the side and the centre-board. But we must apprise the builder, that the fore-and-aft rig, whether on two or three masts, requires great lateral resistance, and shape for velocity, inasmuch as this rig is peculiarly well adapted for oblique courses, and oblique courses demand velocity, in order to make it *pay* to contend with adverse winds. We would prefer the square rig for *full* vessels, or those which do not hold on well, for this reason, were there no other: fore-and-aft sails are best calculated for close-hauling, and close-hauling demands great side resistance, with speed; and, on the other hand, the yard will not come so close as the boom, and is more in place on a vessel whose hull itself will not stand so close to the line of its course.

Vessels intended for brigantines require their main-breadth carried well forward, and the bulk of displacement contained in the fore-body. The bow should be furnished with great lifting power, and strongly built to withstand the great leverage of head-sail, and the increased shock of the sea. The lifting power, to which we refer, is developed in the shape of the immersed fore-ship, and is consequent on presenting to the fluid the exterior plane of the bow, inclined upward and forward, by which it has a tendency to *lift* above the line of the depressive effort of propulsion. Thus the angle of anterior resistance may be

made to accomplish what buoyancy and raking of masts cannot do. The brigantine has been a favorite rig, for a certain description of vessel, to which it seemed well adapted. There are such brigs on these waters, 135 feet long, having a fore-yard 66 feet, carrying, at the same time, a fore-spencer and a main stay-sail to the deck, without interfering.

The topsail schooner rig requires less preponderance in the bow and fore-body, may have finer lines, and with proper shape and management is quite a match for any other style of craft, when all the points of efficiency are fairly tested. And we desire to say, for the benefit of any whom it may concern, that if the lateral resistance lies chiefly in the board, and the vessel comes quick in stays, it is an erroneous manœuvre to bring the topsail aback, and pay off on the other tack with the due decorum of a ship of the line; it is not required, and time is lost. Let go and haul as soon as it is fairly to the mast, and the schooner will be about and under way by the time the yards are sharp up. We have seen bows so long and sharp under water that they could not be paid off without gathering sternway, and it is plain that either the model or the manœuvre was wrong; other conditions must decide which, inasmuch as both are right in their place. Thus it may be seen, that from the market boat to the queenly clipper, the ship is a chain of a thousand links, to be forged with systematic skill.

MARINE AND NAVAL ARCHITECTURE OF THE CRYSTAL PALACE.

Much has been written of the history, science, and uses of nearly every article exhibited within the magnificent edifice of the Crystal Palace, except the representations of nautical skill, contributed by the architects of commercial mechanism, to complete the sublime spectacle of an exhibition of the handiwork of the civilized world. Page upon page has been spun out to surfeited readers on subjects deserving, at best, a position at the foot of the catalogue of the necessary and indispensable pursuits of human industry, while subjects upon which are grounded the

corner-stone of great nautical enterprises and prosperity are passed over with very slight allusion, and, if touched at all, bungled up in absurd dogmas of obsolete philosophy. Even what little has been written in this manner has seldom or never reached the eye of the inquiring mechanic, for want of a medium which he may call his own, in the world of types and paper. It is, therefore, with no little pleasure that we announce the establishment of a press, on which the ship-builders and nautical men—the spine of commercial success—in the United States can rely for intelligence, as in other pursuits and professions, concerning the development of fact and fiction, which are ever revolving in the circles of toil and study, giving life and happiness to the exercise of mind and muscle, and strengthening the powers of business capacity.

And while the Crystal Palace is about to close—and it would scarcely be expected that we should remain wholly silent upon a subject of such interest to the mechanical world, when a channel of popular communication with the commercial fraternity is about to be opened in this Journal—we beg to present a few observations that may be expected to reach the orbit of mechanical readers, who may desire to learn whether palaces of iron and glass have had any attractions for the architects of commercial fabrics, and how far marine artificers have ventured to display the wonders of their inventive genius. Were it not, in some measure, out of place to undertake to present our readers with an analysis of the models which are exhibited in the nautical courts of the Crystal Palace, at this late day, when a commission of brass buttons and epaulettes have long since set upon the "lines" and "angles" of what could have been to them but mere fancy-shaped blocks of wood, and announced their "opinions" to the public, we could hope to see the work accomplished in the NAUTICAL MAGAZINE. But seeing the tide of curiosity is ebbing from the gates of this great public Exhibition to swell the channel in some other stream of life, it will be quite sufficient if your correspondent can be permitted to present a glance from the receding images of creative art, which are fading from the popular view.

Although many of the models which were exhibited at the

first opening of the Palace are not now on exhibition, yet we shall consider it within the scope of our plan to speak of them likewise, and shall, therefore, invite the reader to enter with us this magnificent edifice, and proceed to reconnoitre the enchanted courts.

Let he who hath lost faith in man, who sees in his handiwork no progress towards perfection, come here and controvert those mute, but conclusive arguments, which attest not only the mind of invention and hand of ingenuity, but the nobler and diviner sentiment which endows genius with the aspiration and devotion to scale the topmost pinnacle of excellence. What are the numerous fairs and exhibitions, which have become popular over all the land, on a scale as vast as the enterprise of the age, but the *metres* of man's progression, and the measures of his efforts to attain perfection? The Crystal Palace has furnished a grand school of industrial ethics, where human nature has been free to choose her own emotions, and at leisure to correct her numerous errors.

Although we have derived much pleasure and profit from the Exhibition, we must confess to disappointment in finding that the skill and ingenuity of American ship-builders have been so meagrely represented, while the architecture of our transatlantic brethren, with but one exception, has not ventured to obtrude upon the curiosity of the New World. One lone theorist from France has displayed the model of an iron steamer, propelled by a pair of vertical wheels, the shaft being vertical, and one-half of the wheel without and within the ship. In other words, the paddle-box is in the hold, and the wheel is entirely immersed. Of course there is a small amount of headway to be expected from such a contrivance as this, and this model, which exhibits neither science nor art, serves best to expose the abstractions of one who would improve steamships and their wheels without a knowledge of the relations and adaptations of either.

Indeed, the visionary and absurd monopolize no inconsiderable space among the specimens of nautical design, and will furnish a chapter for the instruction of their authors, as well as an amusing paragraph to enliven the observation of practical men. But while we could wish to have seen many more examples of modelling and draughting, constructing and equipping, the various

classes of vessels employed in the navigation of ocean, lake, and river, we cannot lose sight of the consideration that the cost of constructing many of the beautiful emblems of commercial mechanism, such as are on exhibition here, is far beyond being commensurate with either the honor or the profit of such enterprises. Most of the number of those who actually devote their studies to the improvement of marine architecture, on a rational basis for success, are far from being wealthy men, but are mechanics familiar with the muscular and mental evolutions of the ship-yard, with the pressing necessities and duties of every-day life, divested of the drapery of poetry and romance, but NOT familiar with that advantageous convenience and power which can be realized from the jingle of dollars. Such men can ill afford to get up models with no more paying object than for mere show, which, if containing anything valuable in the way of proportions and shape, these not being patentable properties, may be of vastly more benefit to the public than to the makers, who would reap nothing tangible beyond an envious distinction, soon to be forgotten for their pains. To seek fame, at the cost of famine, few are so devoted to the general good. Yet the world may rest well assured that were it not for the *passion* of inquiry, investigation, and the love of truth, deep rooted in the nature of man, and the pioneers of science specially, very slow indeed would be the snail-like progress of the arts. How often have the results of years of patient investigation and midnight toil become the theme of denunciation, or the subject of brazen plunder, on the first glance of the skeptic, or the wary business man! Yet the heroes of invention stand up to the charge like men unfolding new theorems of science, or pointing out new prodigies of art. In proceeding to notice some of the more prominent examples of modelling, we may remark that the skill and science which have furnished the lustre to the fame of American ship-builders have but few representatives in the courts of the Crystal Palace. There are shipping on the stocks, and in the waters of New-York, superior to anything to be found in the Exhibition, and some classes of vessels, for instance propellers, are not to be found here at all; and it is to the ship-yard and the slip that students of nautical architecture may repair for complete examples of

their art. Let us also remark that the classification of *ship-building*, with "military engineering," was one of those *wonderful* and *profound* discriminating labors of those who were charged with organizing the departments of the Exhibition at the first opening of the Palace, and is calculated to provoke a smile on the face of the unpretending man of the model, when he understands, for the first time, that the peaceful insignia of his mysterious profession are deemed to be concordant with the arms and armor of the warrior on the battle-field!

The first example which comes before us is the full model of the clipper-ship "N. B. Palmer," 1,400 tons, on a scale of one inch to three feet, made by D. D. Westervelt, of New-York, showing the disposition of all the frame-work, and exhibiting the skeleton plan of the entire hull. It is a correct representation of materials and workmanship, in every respect perfect and complete, and is very neatly done. The anatomy of a first-class American ship is here presented in an attractive manner to all who will see, and cannot fail to afford an instructive lesson to those who are unacquainted with the evolutions of the ship-yard. It is a miniature ship on the stocks, in frame, ribboned off, clamps in, and decks framed.

Close by stood the full model of the "Black Warrior," on a similar scale; and while she exhibits the water-lines of the bottom, she appears, in all her parts, complete externally, ready for an ocean voyage. This is a fair representation of the sea steamer, although we might take exception to the abrupt section-lines of the ends below water; but the water-lines, so called, have been very carefully formed. The "Black Warrior" is painted according to life, and is the work of Collyer & Rozus, makers, of New-York.

Foremost in the display of steamship models stand those of the "Georgia" and "Illinois," built by Smith & Dimon, of New-York. They are very fine specimens of modelling and workmanship, and as their tables for the loft have been published in Griffith's Treatise on Ship-building, little need be said here concerning their shape.

The "Georgia" was finished in 1850, and embraced many innovations in dimensions and shape, and was in advance of public

opinion at that time. She has made 400 miles in twenty-four consecutive hours, with but four-fifths of the power of rival steamers, no greater in size. The aft body presents much rotundity to the retiring fluid, and the bow is very long and sharp, curving outward and forward. The "Illinois" is a longer and sharper ship, and, though differing in general dimensions, embraces similar elements of shape, and was said to be the fastest in her line when finished in 1852. Her ends above water are finer and more reduced in size than the "Georgia," exhibiting in this respect the progress of the peculiar steamship model, which has since received new impulses in the career of perfection, not only at the hands of her expert builders in later examples, but at the hands of other modellers. The pace of improvement is such that the models of past years never fully reveal the aspirations of the enterprising mechanic, though the very same *principles* are involved in the *form* of his vessels. There are not only the demands of *utility* looming up from experience, but the demands of *futility*, the authors of which the observer has no means of discriminating, to be embodied in every future model; and consequently the builder, though ever endeavoring to improve his designs, is never content with what has been done, or clearly determined what shall or may be done.

(*To be continued.*)

TONNAGE.

A VESSEL is understood to be something containing, and may very properly belong to that class of structures which will either contain fluids, or be sustained upon them in a floating position; as a consequence, it is entirely proper, and indeed it is an appropriate adaptation to regard all kinds of vessels adapted to the purposes of navigation as measures of capacity, or of merchandise, the purposes for which intended being so entirely and completely analogous to that of tun, pipe, puncheon, hogshead, barrel, firkin, bottle, kettle, or cup, showing that although differing in form, yet designed for the same general purpose, that it must at once be conceded that structures made to float upon the water, for the purposes of commerce or war, whether by the peculiari-

ties of the rig they may be termed ship, bark, brig, schooner, sloop, yacht, or yawl, whether impelled by wind, steam, or oars, may not be inappropriately termed vessels. Now the laws of common sense (which should be the basis of all law) would teach us that the measurement of all vessels, whether globular or angular, floating or otherwise, should be determined either by weight or capacity, and that the only mode of obtaining the bulk of a vessel is to measure it, without reference to what it should be, regardless of what it really is. If it were necessary to determine the contents of a cask filled with any substance, would the interested parties be content with an assumption of the capacity, with no tangible knowledge respecting its real capacity? We answer, no. And why? Because absolute certainty is always preferable to conjecture, particularly when *dollars* are likely to warp the judgment by forming a party to the inquiry either in manner or extent. It is a demonstrated truth that every article of produce, manufacture, or traffic, has received from the hands of civilization some distinct and appropriate standard for determining its qualities. To this end, the weights and measures of most nations have been established with the utmost exactness upon the rigid inductions of science. Some of the most beautiful truths of geometry have been applied to the computation of quantities. Such is the importance of the attributes of weight and bulk, in every species of property, when related as such to the acquisitive nature of man. Of no less utility would it appear to determine a standard by which vessels may be registered, bought, sold, and computed in terms of capacity for burden. It is now about one hundred and eighty years since Sir Anthony Deane made the first application of mathematical inquiry to naval architecture in England, but this inquiry had no connection with, or bearing upon, the rude laws for the admeasurement of vessels for registry, and the estimation of their value; and had not the monarchical governments conceived the idea of levying tribute upon shipping, the tonnage laws might long ago have had a basis in common sense and utility, and have been adapted to progressive art. The thinking merchant, as well as the mechanic, cannot fail to discover the character of vessels built, when the present law was enacted for their measurement, if they will but consider the exponent of capacity, or the divisor 95. If, as

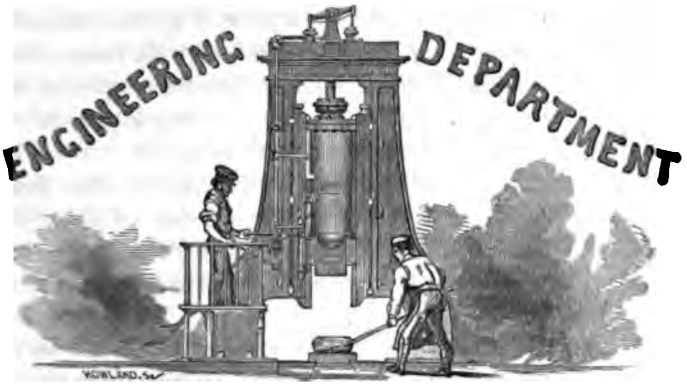
was then, and is still assumed, 95 per cent. of buoyancy or capacity was represented in every vessel, they were indeed (as they have unwisely been called at the present day) floating warehouses: 95 per cent. of an oblong box shows how small a proportion can be taken off for adjusting the shape of the vessel, and yet, strange to tell, we Americans are working by the same rule in 1854. For the benefit of our readers, we will furnish the government rule for measuring both double and single-decked vessels. If the vessel be double-decked, take the length thereof from the forepart of the main-stem to the afterpart of the stern-post above the upper deck; the breadth thereof at the broadest part of the main-wales, half of which breadth shall be accounted the depth of such vessel, and then deduct from the length three-fifths of the breadth, multiply the remainder by the breadth, and the product by the depth, and divide this last product by 95, the quotient thereof shall be deemed the true contents or tonnage of such ship or vessel; and if such ship or vessel be single-decked, take the length and breadth as above directed, deduct from the said length three-fifths of the breadth, and take the depth from the under side of the deck-plank to the ceiling of the hold, then multiply and divide as aforesaid, and the quotient shall be deemed the tonnage. In October, 1853, the Treasury Department of the United States issued a circular, inviting ship-builders to impart information respecting the modes of computing tonnage, both in the United States and in foreign countries, at the same time inviting such suggestions as came within their province, stating, as a reason, that it was proposed to submit to Congress a revision of the revenue laws. The information was imparted, but from some cause no action was taken. That the subject may appear luminous and palpable to every mind, however obtuse, we have shown the body-plan of a vessel of 640 tons, of such class as is now being built, and is regarded as the kind of vessel on which the tonnage law has but little influence. It will be perceived that a line of flotation has been designated, below which the centre of buoyancy is shown on the middle line 3.72 feet above base. Now let the dimensions of the immersed part of the hull be taken, or the length, breadth, and depth, and compute the cubical contents, or the displacement, and we shall find that only 51 per cent. of the oblong box remains, or that of 29274.4

cubic feet of water is displaced by the vessel, if we now divide the number of cubic feet of water displaced by 35, inasmuch as 35 cubic feet of water are equal to a ton, we shall have the real tonnage or weight of the vessel and cargo when loaded to the line of flotation shown in Fig. 5, which = 836.4. We have already said that this vessel, by the government rule, would measure 640 tons, leaving but 196.4 tons for the weight of the vessel, which is below the real weight nearly 100 tons, and yet this is a most favorable application of the present law. In all cases, the weight of the vessel should be deducted from the gross amount of tonnage; and inasmuch as we have extended our remarks quite as far as our space will allow, we will refer to the scale of displacement of the steamer *John L. Stephens*, Fig. 4, which shows the weight of the vessel at the successive changes in her lines of flotation, by extending a line at right angles down to the scale on the base, where the weight at the launching line of flotation is also shown.

(*To be continued.*)

THE TEREDO.

A PLAN for the preservation of submerged timber from the attacks of this "worm" has been devised by Mr. Swan, of Shoalwater Bay, New-York. He claims that it is both cheap and effectual, and has been appointed by the California Academy of Natural Sciences to investigate the matter. A marine railway, to which it was applied, remains, at the end of eighteen months, perfectly sound, while timber by its side, or the same species of wood, has, within that period, twice required renewal, having been fairly riddled. It is simply the application of a mixture of asphaltum, 100 parts; sulphur, 40 parts; and arsenic, 20 parts; used as a paint, the asphaltum being melted, the other materials stirred in, and the whole applied hot with a common brush; the wood must, of course, be dry. If this new admixture, in its application to *vessels' bottoms* in the *various ports* of this and other countries, proves to be as effectual as the trial here would seem to promise, the value of the discovery will be highly appreciated.



SCREW PROPULSION.

The principle of propelling steam vessels by the instrumentality of screw-blades was only fairly brought into commercial notice fifteen years ago; and such has been the earnest attention bestowed on this favorite mode of propulsion by the eminent engineers of America and Europe, that it has long since had its advocates, who claimed for it superiority over every other known mode, both for economy and efficiency. The screw was first applied as an auxiliary to sails, and chiefly valued for the advantage it afforded to the powers of the ship in light weather or head winds. But it was soon discovered to be a specific mode of propulsion, and as such, capable of standing upon its own bottom, to the discarding of sail entirely, except a spencer and stay-sail on the foremast as on the lakes, or a light suit of fore-and-aft canvas as on the Atlantic.

A class of steam vessels, technically known as propellers, is now to be found in most of the navigable waters of commercial countries, and are chiefly employed in freighting; and for the coasting trade, where intermediate ports are to be touched in the course of the voyage, this class of vessel has no superior among commercial fleets. Various have been the experiments, not only to ascertain the diameter, number, form, pitch, and area of the screw-blades, but the question of direct action, or by gearing, regular or irregular, screw, &c., together with the *resistant area* of the vessel, and numerous other problems, have been made again and again, at much cost and perseverance; but

so far from determining anything tangible, if we can judge from the conflicting practice of propeller builders in different parts of the country, in some of the latest and finest examples of their mechanism, we must regard the science of screw propulsion as yet standing on the threshold of perfection. It is only by a series of patient and well-conducted experiments, extending to every known form of vessel, screw, and mode of application, disruption of engine, depth of water, &c., that the most suitable adjustment of the various elements of screw-propellers can be determined.

Some valuable papers upon this subject have been written, and there being room for more, we will continue our remarks, for the purpose of attracting attention to some of the later experiments of nautical engineers.

It has been established, as a first guide to determine the diameter of a propeller, that the same depends on the draught of water, and may be taken from 95 to 98 per cent. of the height of load-water line. This has been for deep-sea navigation; but where will this calculation be for the propellers of our inland seas, (whose burden ranges from five to ten hundred tons, and must soon come up to 1,500,) which are required to run on a draught of from eight to eleven feet? The spirit of that expansive country, surrounding the finest chain of marine basins on the globe, knows nothing of the restrictive barriers of common-place science, but remitted to the amplitude of her prairie vastness, builds propellers on a corresponding scale. We have seen one of the largest vessels of this description, that has made several successful trips from Chicago to Buffalo, in which the rule appeared to be *twice* the draught of water for the diameter of screw; in other words, the propeller was about twenty-two feet, and only buried to the axis when the vessel was loaded. It had six blades, two of which were in constant action when in use, and four were out of water, except occasionally in a seaway, the application of power is direct action. Gearing is very generally repudiated on the propellers of the lakes, and it can scarcely be said that any general rule is adopted in proportioning the diameter of screw to the draught of water. One-third of the diameter above water has not been considered an

extravagant proportion, and the example we have cited may be regarded as an experiment.

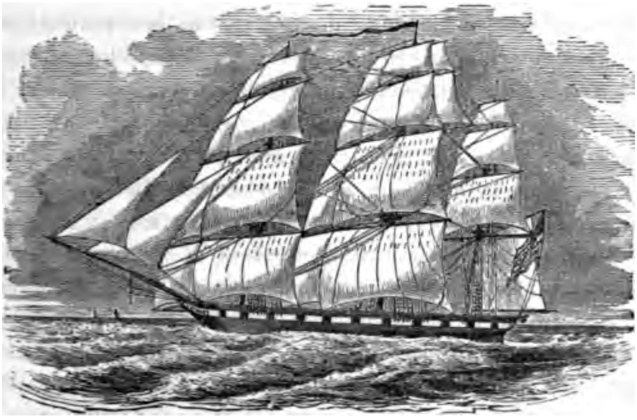
But perhaps the most interesting experiments in screw propulsion will be found in the example of the *side-screw steamer Baltic.* This vessel, formerly a side-wheel steamer, 230 feet on deck, 30 feet beam, 12½ feet hold, running on the lakes, has been furnished with a pair of screws, of the kind in ordinary use, 13 feet in diameter, draught of water 10 to 11 feet, located on the side in lieu of the wheels, which are removed, and are worked by two engines situated above the gunwale, and connected to the crank of the screw-shaft, which, as a matter of necessity, is submerged. We have not been able yet to gather all the facts which are required to furnish data for a complete analysis of the merits of this invention, nor to compare the performances of side-screws with side-wheels. Meanwhile, we may state, that we learned from the engineers of the *Baltic* that they could reach a speed of eight to ten miles an hour when loaded, adding that this result compared favorably with the old performance of the boat when side-wheels were used, and they were sanguine of the success of the new plan. The *side-screw propeller* is the invention of Captain H. Whitaker, of *Buffalo,* who has applied for a patent. With respect to public opinion, we think it fair to state it is divided on this, as on every other *new* thing, which is a matter of no consequence to an investigator who looks only to facts, figures, and fair trials for conclusions in mechanical engineering. If we will look into the present arrangement of locating the propeller at the stern, we shall doubtless discover that there are some things very desirable which are not yet accomplished by this mode of application, as vessels for screw propulsion are at present modelled; and if Captain Whitaker's screw can be brought into satisfactory operation, it will be calculated to obviate some of those difficulties which are found to lie in the steering and trim of propeller ships. It is well known that in certain conditions these vessels are hard to manage, chiefly owing to the location of the engine and boilers on one end, which spoils their trim when light, and the speed of the boat also causes her to settle, and so increases the difficulty; moreover, the fore-end being the lightest and most exposed to

the wind, increases the liability to veer from the course, to which is added the influence of the propelling instrument in close proximity to the rudder, disturbing the posterior current. These are a few of the reasons why it is desirable to adjust the propeller near the middle of the vessel; or, to say the least, to seek a *remedy* for these evils, either in the *model*, or in the *adjustment*, or in *some* other *device*. And while we have opinions on this subject, upon which we do not propose to enlarge at this time, we will give our readers the benefit of our observations. We have recently seen the hull of a fine propeller on the stocks in the city of Buffalo, in which a centre-board is placed in the foreship for the purpose of obviating the difficulties in steering, and to prevent the head falling off in a beam-wind or sea. The utility of this experiment can only be known by testing it, and the same may be said of any other plan.

ENGINEERING IN THE BRITISH NAVY.

The British steam-fleet in the Baltic are provided with a complete engineer's establishment, fitted up on board the attending steam-frigate "Volcano," for the purpose of effecting speedy repairs of machinery at the shortest notice. This establishment comprises a spacious room 104 feet long, 30 feet wide, and 10 feet high, in which are situated a 12-horse power independent steam-engine, and two boilers to drive the various machines and tools which constitute the equipment of this sea-going machine-shop. These consist chiefly of four turning lathes, of graduated capabilities, two planing machines, two boiler-plate punching and shearing machines, four drilling and boring machines, two bolt-screwing machines, one steam-hammer, with four forges, one cupola, capable of executing any brass or iron casting below 30 cwt., with foundry apparatus and material, and a blowing-fan to supply blast to the forges and foundry cupola, together with anvils, vices, grindstones, and every other article of minor implement. Mr. James Nasmith, of Patricroft, had the charge of fitting up the "Volcano."

Nautical Department.



THE OCEAN.

When we consider the geographical divisions of our earth's surface being apparently so unequally divided, two-thirds of its material being a fluid, and but one-third in a solid state, it would be time well spent to inquire what should be the proportion of man's interest in the two states of matter—seeing that he is not an amphibious being, that the sphere of his physical life must be upon the solid earth; in other words, *air* and *earth* constitute the principal elements of his subsistence. Without water, how long could he survive? The vast clouds of vapor gathered from the ocean are borne away by a mysterious law, to replenish the earth and furnish sustenance for man. The mountain height and desert waste receive and pour out their liquid treasures, to be gathered again into streams and torrents, returning with exulting bound to its mighty reservoir. These are the heralds which in every land with ceaseless hum proclaim the exhaustless resources of the mighty deep. To the ocean belong the most fearful exhibitions of power known to man. The volcano, with its flaming trail; the earthquake, whose footprint is desolation, and whose track carries destruction in its wake, as well as the avalanche, shaken from its crystallized and glittering steep, are all circumscribed in the range of their visitation. The ocean, when aroused in its chainless strength, sends forth a voice

that shakes a thousand shores. The gnarled oak, with bolted bands, is tossed as if in mockery from its crest, and marshalled millions perish as if by stern decree. Man has realized upon his native shore that there is nothing perpetual but change in time, but he finds the ocean still rolling onward in all the fury and greatness of its unabated strength. Over its majesty of form and mysteries of might, time and calamity have no control. The storm upon the land is impeded, and its force broken by mountain and forest; but on the ocean its march is unresisted, it still rolls onward with tumultuous roar, spending its exhaustless strength upon a thousand isles. Its glittering pavements, made of shells with tinted hues and coral groves, or pebbled reefs, are shaken from their resting-place and cast forth as hardly worthy of its care, while the leviathan finds a home beneath its watery depths. Its untiring messengers send prosperity to every land, and but for its daily courier, (the *tide-wave*,) death and desolation would brood upon its broad expanse, its slimy depths would exhale a stench as nauseous as a Stygian lake; congregated myriads of noisome reptiles would hatch prolific from the millions of slumbering chambers of our kindred race. The halls of amber glowing in its depths beyond life's safe approach, would cease to glitter, and become the charnel-house of man; no longer would the pearl-diver seek the watery gem, and man would cease to filch that which was no longer valuable from the treasures of the sea; the mountain-crested billow would cease to be the drifting monument of the mariner, and financial operations cease to pulsate the commercial world.

The ocean furnishes the highest triumph of the genius of infinitude, as well as the most wondrous exhibitions of man's power and skill; he mounts its fiery billow with confidence in his own resources, as developed in the exhibitions of science and the prowess of mechanism. Of all the transforming influences that operate through physical agencies upon the power of man, the ocean furnishes the most wondrous change; it unbends and weaves anew the work of man's moral as well as his social being. It changes his habits, his feelings, and his associations. It breaks up the sealed fountains of his nature, and stamps new features upon his soul, prominent as the frowning cliff which overhangs its ceaseless surge. Once the adopted child of Neptune's wide

domain, he can never bring back his entire sympathies to land; he still sails in his dreams over the watery waste; he still bounds in exulting triumph through the foaming crest. Other realities of life are tame, when compared with these; and if on shore, he sighs for his adopted element, like the caged eagle for his mountain crag.

On the ocean, kingdoms have been lost and won. On the fate of Actium hung the dominion of the world, and Rome dates her empire from the naval victory of Augustus. Persian pride found a grave in the Gulf of Salamis; and the crescent was forever lost beneath the waves of Navarino; while at Nile and Trafalgar the molecules of fluidity were dyed with human gore. To the thinking man a middle night-watch upon the mighty deep is the fruitful season for loneliness of feeling, solitude and desertion, mingled with a sentiment of reverence for the vast, mysterious, and unknown; and if his mental powers hold affinity with the sublime and the benevolent, he is half entranced in veneration and in tears, as he contemplates the benignity of his Creator, God, in contradistinction with the corruption which instinctively tracks his own career, obliterating the beauteous traits of moral agency in man.

When he contemplates that there is naught above but the canopy of heaven, and naught around and beneath but a watery waste, the tender and the terrible, the soft and the sublime, rush upon his mind, and he realizes that there is but a plank between himself and death—time's termination and eternity's beginning are separated for the present only by mechanical skill. But the night-watch passes away, and man, in the coruscations of his mind, contemplates the history of the past in connection with new revelations in the science of progressive art. He rolls back the curtains of the past to scan the first efforts of nautical skill in savage life; he there discerns courage without rashness in the first crude effort to float the fragile bark across the placid stream; the hush of wonder gives place to new efforts, and the frail bark is slowly urged onward with pole against the bank, and then the laboring oar. At length, admonished by *Boreas*, the sail arose, and new draughts were honored in propulsory power upon the lubric stream by the aid of *Orion* or *Palinurus*. The Chinese junk was steered from her own shore, and lowered

her mat-sail, and dropped her wooden anchor, for the first time, in unknown seas, while civilization was slowly descending the Nile by the aid of the laws of flotation, long anterior to the Argonautic voyage in quest of the golden fleece. Still the mariner steered boldly from headland to headland, and with unwearied activity extended commerce to those parts of the world yet unexplored. Still, however, he was powerless as to the direction of his proper course, when the promontory was sunk from view, or the constellations lost in clouds. The exploit in circumnavigating Africa by the fleet of Necho is the most wondrous in the early annals of nautical pursuits; but it was reserved for the discovery of the polárity of the magnet for the most wondrous exhibitions of nautical skill, which may be regarded as the first of the three events that have more influence on man's physical destiny than all others recorded in his history; the doubling the Cape of Good Hope followed second in the list, and last, though not least, was the discovery of America.

The whole earth now lay open to enterprise, and the cargo of the ship soon overwhelmed the load of the camel, the highway returned to a desert and was abandoned to forgetfulness, while the mast of the naval prodigy soon bore the insignia of power to every land. But a new era dawns, and progressive science launches new ships, which dash scornfully by the naval monster; the powers of man are still unexhausted, a genius rides in triumph above the searching storm of ridicule, éxerts and sets afloat a power perfectly distinct and isolated above the laws of nature, and the mighty machine is found to be instinct with artificial life; the steamboat threads its way, and gives motion to the rippling wave that marked her foaming track. But genius stops not here: soon the ocean itself is invaded, and vast engines of flame and vapor are driven through the drifting surges to encounter the éffect of distant hurricanes, or to hurl defiance at Neptune, in the midst of all his mighty power, when clothed in regal wrath. Nothing on the round earth exhibits the wonders of science so effectually as the ocean, which man has made the theatre of his power. The majestic ocean, once aroused in its chainless strength, presents the appearance of universal anarchy, coufusion, and tumult, whose mighty roar is but the voice of nature, speaking through the mirror of God's infinity.

THE SAILOR'S HOME.

Old ocean, old ocean, I have witnessed thy power,
I have gazed on thy wonders in a trying hour;
I have laid on thy bosom in calm and in storm,
I have mounted thy billows when so altered in form.

When in childhood I had learned to call thee my home,
When parents and friends were all dead and gone;
When the changes of *earth*, so apparent to me,
Then I found there were still no changes in thee.

The grave of my mother and father has fled,
I cannot now find them—they long have been dead;
All earth's full of changes, wherever I be,
But still on the ocean no changes I see.

Oft have I been shipwreck'd, once thrown on the beach,
With canvas all tatter'd from clue to the leech;
It was long before *steam* had been thought of on sea,
That the surge-beaten shore was seen under our lee.

Though my friends and my kindred have long been no more,
And I left alone on thy surge-beaten shore,
I love thee, *old ocean*, in calm and in storm,
I fear not thy billows, though angry their form.

Very soon the storms of life's voyage will be past,
My sails will be furled, or all laid to the mast;
A hammock, most likely, my coffin will be.
My tomb-stone a billow or a wave of the *sea*.

Steamers on the Willamette.—There are now eight steamers running on the lower Willamette River. Oregon City is deprived of a morning boat down, because the water is at present too low to allow them to come quite up to the regular landings. The Willamette is about half the width of the Ohio River. It is navigable eight months in the year, eighty miles above Oregon City, for steamboats of large size.

For the Nautical Magazine.

AN OLD SALT.

Messrs. Editors :—Having seen the Prospectus of your Magazine, I heartily congratulate you on your embarkation upon a voyage of discovery in the nautical department of mechanical science ; and now that the long-wished-for channel of communication has been opened, which has not, perhaps, been as eagerly sought as the Northwest passage, but no less beneficial (if properly managed) to the commercial world, if I understand the extent of the voyage, as laid down by the chart of your prospectus, every kind of craft may find a free passage on compliance with certain conditions: no matter what their tonnage, their breadth of beam, or draught of water, they may find a port of entry, a depository where the chart of experience may have a safe harbor for examination by posterity, which now, alas! too often finds a winding-sheet with its possessor in the same hammock, to be buried beneath the dark-blue wave, or be doomed to pass muster by compression into the columns of a daily sheet, or be dragged through the lubber-hole of the weekly press. How often the weather-beaten mariner has been compelled to remain at his moorings, heading to the wind, and against the ebbing tide, in some dangerous strait, while some more favored hulk has been towed into port by the steam-tugs of the daily press ? And while I leave you, to finish an article too late for your first number, may I not wish for a full allowance and fair weather to the noble hearts who conceived the idea of a Nautical Magazine ? AN OLD SALT.

Light-house Tolls.—The *Scotsman*, British paper, of August 23, contains a notice to mariners concerning the tolls levied on tonnage passing Whalsey Light: $\frac{2}{16}$th of a penny if on a coasting voyage, one penny on an over sea voyage. Every foreign vessel not navigated wholly in ballast is to be charged double these respective rates. These tolls are liable to an abatement on payment of ten per cent. on coasters, and twenty-five per cent. on foreign-bound vessels.

WATER—ITS SCIENCE, AT REST AND IN MOTION.

WATER being the medium of navigation, it is clear that an investigation of its principles is the first work of the nautical student. Indeed, to the aspiring man, whose mind is bent on launching the swift commercial steed, bound to ride the ocean wave in triumph, no more inviting task can be presented. With keen delight, see all his powers engaged in analyzing the wondrous results that Infinite Genius has developed in the creation of this beneficent element. To him, a ship appears in every forest, a model is moulded in every wave, and delightful contemplation awakened by the bewitching grace of creative Art, stamped in mechanical expression on the noble lineaments of every fine ship.

To him, the vast bodies of this fluid, which level up the intermediate spaces between continents, and trace the flowing courses of innumerable highways of transit from clime to clime, while furnishing to the enterprising sentiments of man the widest fields of glory and reward, through nature's language of adaptation speaks, demanding for their commercial subjection the most exalted effort of ingenuity and talent.

Ship-building and navigation, then, underlying the superstructure of commercial enterprise, and standing on a natural basis of first principles, challenges to success in practical operations, on condition of tracing the "lines" laid down in nature's chart for governing the motions of fluids. Of the truth of this proposition there can be no question, however wide we may err in our efforts to define the golden sirmark of science.

And now let no one fear that we are about to launch forth into space, or with bubbling exit sink beyond the plummet's scope—a few words will avail to describe our views of the universal agent of circulation, so far as commerce may be interested.

The chief points in the nature of water which influence the configuration of vessels designed for navigation, hinge upon *attraction* and *gravitation* in the mass. Its particles appear to consist of globular molecules, disposed in columns, which balance each other under the same atmospheric pressure at equal dis-

tances from the centre of the earth. It is a non-elastic, frictionless body, considered with reference to the nature of its own particles, but is capable of exciting the quality of friction when brought in contact with any other body of matter. The cohesion of its particles is very slight, being only sufficient to form in bodies as large as a dew-drop, and this property, in combination with the force of gravity, gives rise to the descending tendencies of water, and all fluids follow the same law. But as fluids differ from all other bodies in the absence of attraction or cohesion among their particles, they embrace a peculiar property no less singular and wonderful, and for the mechanical world no more useful property of matter has yet been discovered. We refer to the equilibrium of its columns, or to the *equal pressure* of its particles in every possible direction, exhibiting to the wise of every age the puzzling problem of "*pressure*" versus " weight." In consequence of the extreme facility of motion with which its mass is endowed, each atom may be regarded as an infinitesimal solid, independently obeying the fundamental law of gravity, adding to the pressure by increasing the *height*, thus generating a power at the base of a column, however small, that will balance the pressure at the base of another column or body of water, however large, providing each column or body of water had the same height: or in other words, the *pressure* of a fluid is in direct proportion to its height, while the *weight* of a fluid is a property distinctly differing from the former, and is of course, like other bodies, in direct ratio to the volume of the mass.

We may illustrate the influence of altitude upon pressure by figure 1. Let the upper line, marked S, show the surface of the fluid, and the numbers below mark the locality of points through which parallels are drawn at equal distances. Moreover, let these lines be drawn of such length that when multiplied by the perpendicular distance from S, the products will be equal; and we shall have the points for two curved lines exhibiting the ratio of uniform pressure to the eye within their boundaries, as we descend, but without regard to the gravity of water and air, (which will enter into the formation of fig. 2.)

The preceding is not only true with respect to the influence of *height* upon pressure, but a similar ratio obtains in relation

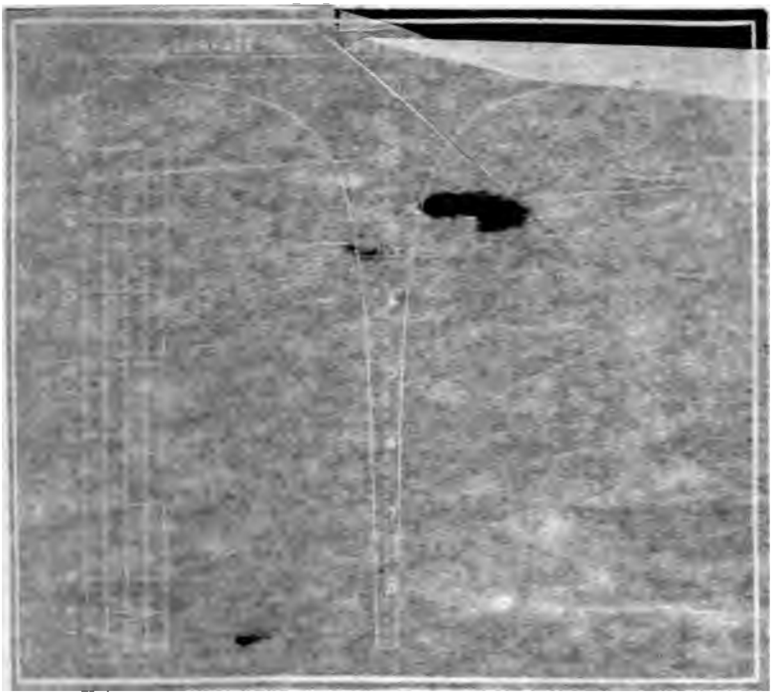
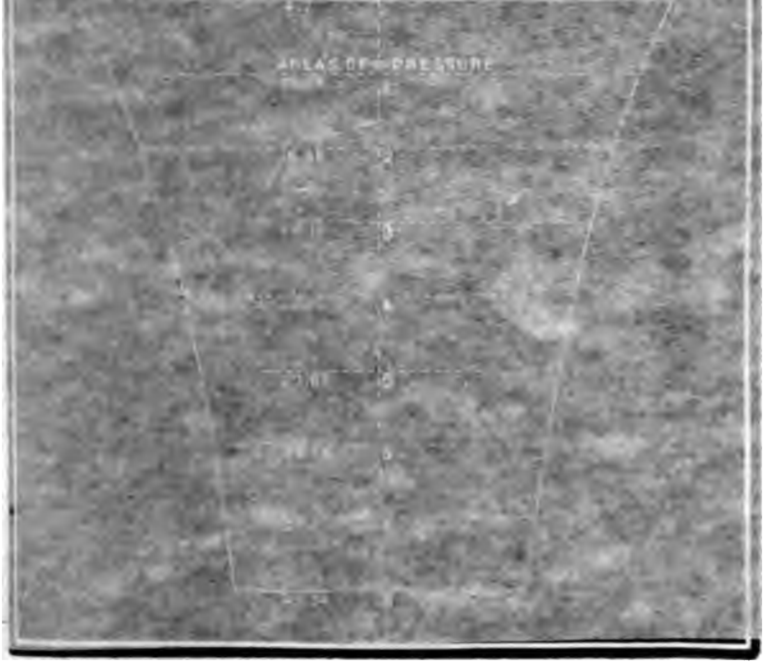


FIG. 2.



to the areas of the bases of columns. A single column of water will exert the same force on a given area of base, if confined above it, as will any number of columns of the same height confined in the same manner. It is, then, the full and complete law of hydrostatics, that the pressure of a liquid, as water, *is in proportion to its height and its area at the base.* Therefore, if an immersed body, which has been calculated to sustain a *uniform* pressure from base to surface, have parallel planes passed through it at any altitude between the base and the surface, the area of those planes will correspond to the spaces defined by the curved lines of pressure, as shown in fig. 2. Let S represent the surface of the water, at which point the pressure of the atmosphere is equal to 14.7, or nearly fifteen pounds upon a square inch. The lines 1, 2, 3, 4, 5, and so on, represent equi-distant areas of an immersed body, which are decreased below the surface in the ratio shown, by the curves passing through their extremities. Now, if we multiply the perpendicular distance of any line below the surface, by the weight of a cubic inch of water, added to the weight of a column of the atmosphere, the sum will give the pressure at that depth, which is the same at any line shown in the figure; and we thus have a figure bounded by curves exhibiting to the eye the ratio in which the volume of a body must be diminished beneath the surface of the water to secure a uniform pressure; or in other words, to secure the adaptation of a floating body to the element on which it rests.

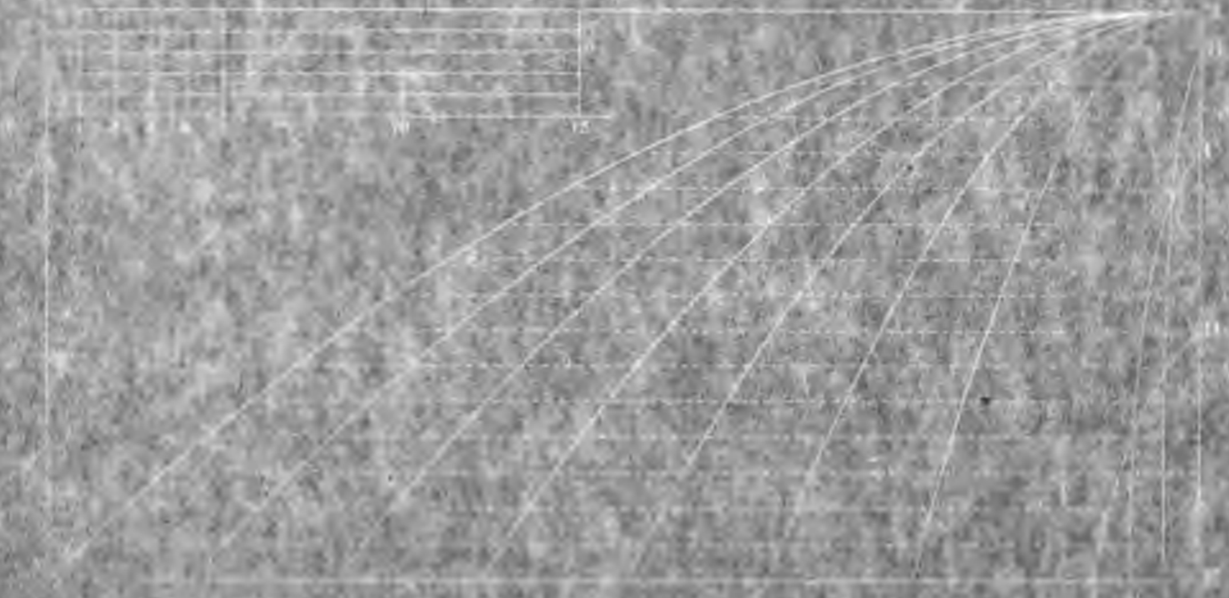
But what has this to do with ship-building? the impatient reader may inquire. We say, something more than may concern the calker who tightens the apertures in the planking of a ship's bottom, and who would discover the proper (or sufficient) thickness of the same, equally with the workmanship, to be influenced by the draught of water, or by the area of seam multiplied by the depth beneath it, to furnish the power of that force which is insidiously laboring to scuttle the ship, as men sink their errors in the effort to sustain them.

Let it be borne in mind that bodies, whether solid or liquid, put in motion by the single force of gravity, acquire the same velocity in equal times; and also, as we have shown that the pressure on the base of a column is in proportion to its height, it

follows, therefore, that the velocity of a current issuing from the base of a column, is in proportion to the pressure at the orifice, and *equal* to that which one drop of the fluid would have acquired on reaching this orifice, if falling freely from the surface. This law we may read in other words: the gravitating pressure of water exerts a force in *coincidence* with the universal law of gravitation, and in effect is precisely *equal* to it at corresponding heights. Thus the velocity of an issuing stream is governed by the laws of falling bodies, which is in proportion to the square root of the altitude; to double the velocity requires quadruple the altitude, and so on in like proportion. Fig. 3 will illustrate this law. Let A E represent a perpendicular tube, with orifices at B, C, D. The law of pressure is such that jets issuing from B, C, D, respectively, would flow with a velocity equal respectively to 1, 2, 3, as the curves B 1, C 2, &c., are described.

This remarkable fact, that hydrostatic pressure is distributed in vertical line according to the ratios which govern the accelerating force of gravity, however strange it may appear, follows as a natural consequence by virtue of the equal pressure of fluid particles in every direction, and the *constant operation* of the gravitating force, transmitting pressure through the addition of fresh impulses to the yielding mass. Thus we see that gravity, the golden force of nature, reigns supreme in the ocean wave, and makes his play-ground of the deep. But ocean has fearful moods. When atmospheric gales walk furiously abroad on the beams of his balances, gravity, guarding with jealous hand the equilibrium of the jewelled sea, seizes its columns by the base, and hurls the avalanchan wave in oscillating fury over the vast field of elemental war. Here it will be remembered, that sea as well as land sustains the gravitating force of an atmosphere which, resting on the entire surface of the globe, presses downwards equal to 14.7 pounds on every square inch of surface; and it is to the velocity, unequal pressure, and friction of the wind, (which is air in motion,) by disturbing the equilibrium of gravity, that we may refer the common exciting cause of wave oscillations in fluids. Motion thus excited may be considered as the action and reaction of compound forces manifested in a passive body, and demands a moment's thought at the hands of the

FIG. 3.



builder, in designing the structures of marine art. For what is the ship but the instrument of communication in transmitting motion from the air, or any power, to the fluid on which she rests? Sailing at sea is but a problem of distributing the increments of power on a line of speed, illimitable as it is trackless, on the "rails" of *foam.*

But, keeping an eye on nature's chart, it is a law of motion produced in part by gravity, that *the direction of a body forward is in a curve line downward,* as shown in figure 3. Force thus received at the surface of the fluid, is in the same manner communicated to the adjacent columns of the rising wave by the laws of pressure. This action produces reaction in the mass, following the same law of gravity in transmitting the motion from column to column that would be observed in the case of a particle *skipping* with the same velocity of motion beneath the surface, only it does not move, but transfers its motion in oscillating lines, with a vertical descent and ascent, in the direction of the driving gale. Hence, the formation of waves is the result of two forces, wind and gravity, or force and resistance, on the part of the two elements, and serves to teach us that the properties of water reside in *curved* lines, and manifests its natural appearances in no other than *curvilinear motions.* Fig. 3 exhibits lines of curvilinear motion, in which gravity is recognized operating in a line with A E, as a constant force, and the velocity of curvilinear direction supposed to be accelerated according to the law of hydrostatic pressure; although the velocity of projected motion, in a line with A F, remains *uniform.* And here is the hint that nature has afforded to the man of the model, viz.: the communication of uniform velocity, whatever the rate may be, through the medium of the displacement to every foot of the yielding fluid.

All power from sails or engine which is not *uniformly* received by the submerged body, from head to stern, is *wasted* on the defective part, and is not only injurious, but sometimes dangerous to the action of the ship. The laws of mechanics will not tolerate the blunders of defective engineering, less than the laws of sea-locomotion will repudiate all bungling attempts at moulding the forms of vessels. This, then, is our point in this

article, that the *proportionate distribution of buoyancy*, or displacement, so as to obtain a *uniform resistance*, and thereby secure a more *perfect economy of power*, constitutes the great problem of modelling; a problem vast enough in its universal application to every class of shipping, to engage the genius of all the builders of the present age in its solution, without jostling or defaming the beautiful productions of their skill, by hostile contrast, of past achievements with the unfolding prospects of the future.

SEAMANSHIP.

From the results of some experience in building vessels, we are quite convinced that the practice of navigation must keep pace in improvement with the advance of science in ship-building, inasmuch as the means and aids of nautical adventure are worthless instruments in any other than competent hands. The science of seamanship—for as a science it must now be studied, that shipmasters may qualify themselves to respond understandingly to the constructive genius of builders, in its application to the performance of voyages, as well as to the nautical manœuvre of every description of model at sea, is not yet recognized by the body of mariners at large as settled upon any well-grounded principles of theory; and we do not deem it unreasonable to assume that commercial men may yet look for gratifying results in the province of the navigator's skill, as well as in the mechanic's department. With masters of vessels, it has been generally taken for granted that but little more can be discovered in the prosecution of their individual researches of material advantage in developing the natural qualities of ships. On their part, it is too frequently supposed that the builder must needs guarantee, not only the workmanship, but the prospective character of the vessel, the dangers of navigation even scarcely excepted. Perhaps this surprising fallacy arises from the fact that while a builder is constructing *one* vessel, a master, or captain, is making *several* voyages, and wherefore it is that the confidence of the latter assumes the preponderance of *opinion* with respect to many questions of common interest in ship-building. So it not

unfrequently happens, after a course of dictation on mechanical matters, that the mariner receives the ship at the hands of the architect, and considers himself quite competent to pronounce upon her character on performing the first voyage. We have known some of the finest experiments in modelling intrusted to unskilful hands—unfortunately for the cause of marine architecture—to have summarily perished in the straits of ignorance. We are persuaded that this arises from the conflicting positions of builder and master, and the absence of systematical knowledge on the theory of managing ships. It is not enough, in order to carry out the designs of a given vessel, that the officer in charge should adopt some theory of working ship, but it is absolutely indispensable that he understand *all* the well-known principles of seamanship which are applicable to the particular model in question, and in accordance with which the builder has designed the vessel he is called to command.

It is not too much to presume that the marine architect has adapted his model to certain conditions of success, and it is these conditions which should form the basis of her evolutions at sea, and likewise her dispatch in port. The province of the competent builder has no less than this extent—to prepare the ship, with her power adapted, and stowage arranged, for the hands of those who are to navigate her; and it is theirs to understand her points, and take care that they be faithfully developed. It will be vain to expect that any satisfactory degree of improvement will be manifest, even during the progress of ages, without intelligent co-operation on the part of all who build and sail shipping. Let the seaman understand that the science of modelling and building vessels, includes a knowledge of their evolutions required at sea—and if wanting in this knowledge, no man can build successfully—and also that it is expected of him by the builders, that seamanship embraces an understanding of the fundamental principles of nautical design in ships, and then both parties are prepared to advance their mutual interests, and the cultivation of a wide field of improvement.

For the Nautical Magazine.

A NAUTICAL INQUIRER.

Messrs. Editors :—In the "Cyclopædia of Useful Arts," page 563, I learn that an ingenious mode of determining the capacity of vessels has been discovered, and that it is adapted to all description of freighting vessels, and then it makes sharp vessels and ocean steamers an exception. Now, without calling your attention to the correctness of this rule, I would merely inquire what kind of freighting vessels this rule can apply to, if the sharp and the flat are excluded? The clippers are said to be sharp, and are recognized as freighting vessels, while the ocean steamers are flat, and they also are freighting vessels; and, indeed, some of our full ships are flat, and they are freighting vessels. Will you give this commercial community, with the rest of mankind, some rule of determining the capacity of vessels, that is, free at least from this long list of exceptions?

A NAUTICAL INQUIRER.

[The rule referred to by the Nautical Inquirer was copied from Griffith's Treatise on Ship-building, where it is denominated Mr. Pook's rule for determining the capacity of vessels; and had the quotation been complete, with the author's remarks, there would have been no occasion for the inquiry, the sense having been destroyed by the abridgment. Perhaps we can in no better way put the Nautical Inquirer on the right track than by furnishing an article on the subject of tonnage, or the measurement of vessels, a part only of which we shall have room for in the present number, and which may be found in the Mechanical Department.]

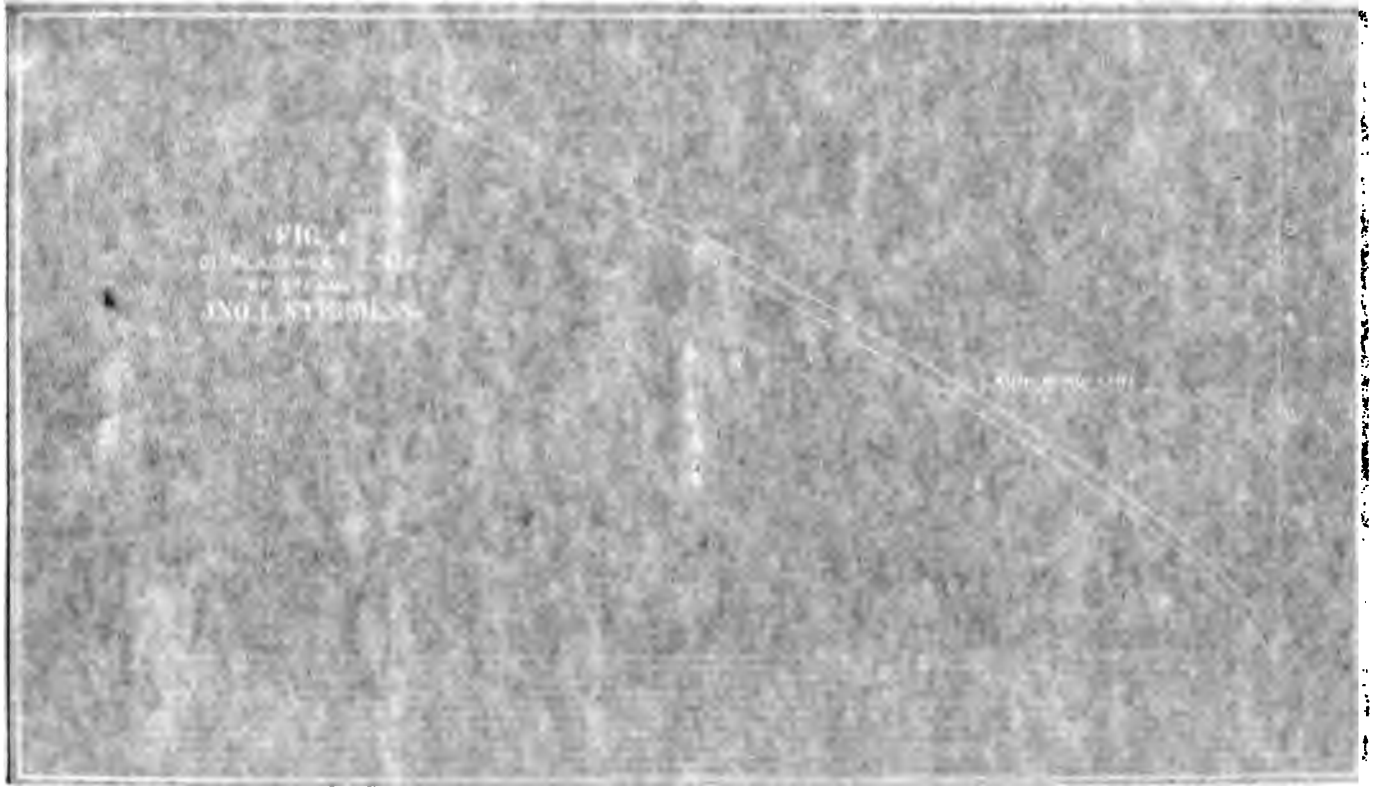


FIG. 4

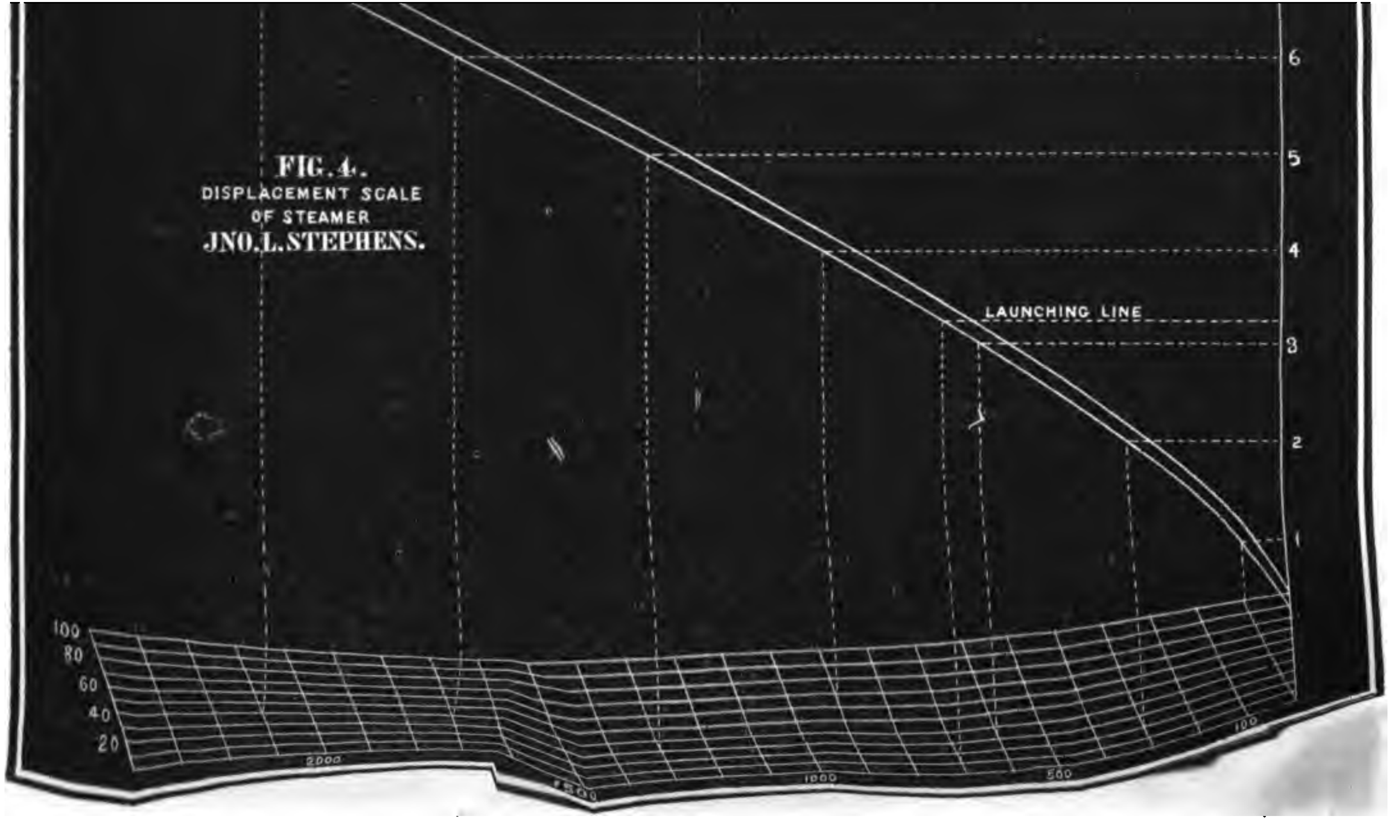


FIG. 4.
DISPLACEMENT SCALE
OF STEAMER
JNO. L. STEPHENS.
LAUNCHING LINE
6
5
4
3
2
1
100
80
60
40
20
2000
1500
1000
500
100

CLIPPER RACE ACROSS THE PACIFIC.

We give below an abstract of the "logs" of the ships Romance of the Seas and David Brown, which have just completed one of the closest and most remarkable passages from San Francisco to Hong Kong, China, that has ever yet been recorded. The two ships towed to sea side by side, in good ballast trim; parted company, and, after a fine passage of 44 days and 22 hours, came to anchor in the same hour, at the same port of destination. It will be remembered that both vessels sailed at about the same time—the Romance of the Seas from Boston, and the David Brown from New-York—in December last, for San Francisco, China, and home to Boston and New-York, respectively. The two vessels were close to each other off the coast of Brazil; and after a passage of 96 and 98 days, reached San Francisco on the 23d of March, 1854. Their dispatch at Hong Kong and subsequent run on the homeward voyage will be the subject of a still more lively interest, when the result of their present trial is recorded.

Abstract Log of Ship Romance of Seas, from San Francisco to Hong Kong.

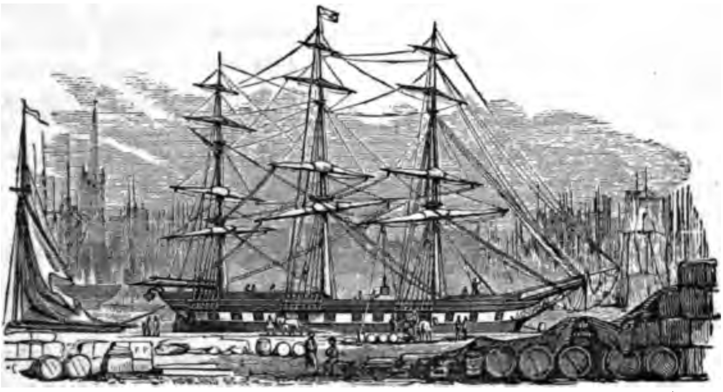
Date.	Course.	Dist.	Lat.	Long.	Winds.	Remarks.
April 1...	S. 28 W.	132	35 41	123 50	N.	5 P. M., steam cast off, light and foggy.
" 2...	S. 29 W.	88	34 32	124 07	"	Light and foggy. 8 hours calm.
" 3...	S. 30 W.	113	32 55	125 04	"	Do., do.
" 4...	S. 24 W.	98	31 26	125 50	N. E.	Light and foggy, with calms.
" 5..	S. 27 W.	191	28 36	127 30	N. E. by E.	Fresh trades, and squally.
" 6...	S. 52 W.	253	25 29	131 14	"	Do., do.
" 7...	S. 61 W.	198	24 42	134 25	"	Light trades, and pleasant.
" 8...	S. 45 W.	181	22 14	136 15	N. E.	Do., do.
" 9...	S. 49 W.	193	20 07	139 20	N. E.	Do., do.
" 10...	S. 57 W.	196	18 09	142 13	N. E.	Do., do.
" 11...	S. 64 W.	197	16 52	145 20	E. N. E.	Do., do.
" 12...	S. 71 W.	235	15 36	149 15	"	Do., do.
" 13...	S. 88 W.	242	15 29	153 23	N. E. by E.	Do., do.
" 14...	S. 89 W.	288	15 14	158 23	"	Brisk trades, and do.
" 15...	S. 88 W.	312	15 00	163 46	"	Fresh do., do.
" 16...	N. 89 W.	240	15 10	167 54	"	Mod. do., do.
" 17...	N. 88 W.	223	15 17	171 45 W.	"	Do., do.
" 18...	N. 88 W.	240	15 22	175 53 E.	N. E.	Fair do., do.
" 19...	N. 88 W.	272	15 31	179 24	N. E.	Brisk and squally.
" 21...	West.	184	15 31	176 24	E. N. E.	Light.
" 22...	W.	188	15 32	173 00	E. N. E.	Do., and squally.
" 23...	W.	246	15 31	168 45	"	Do., do
" 24...	W.	236	15 31	164 41	E N. E.	Moderate and fair.
" 25..	W.	201	15 28	161 14	E. by N.	Do., do.
" 26...	W.	155	15 28	158 35	E.	Light and baffling, with showers.
" 27...	W.	174	15 24	155 35	E. N. E.	Light and baffling, smooth sea.
" 28...	N. 81 W.	146	15 45	153 06	E.	Do., do.
" 29...	W.	122	15 44	151 00	E. by S.	Do., do.
" 30...	W.	92	15 46	149 02	E.	Do., do.
May 1...	W.	98	15 46	147 42	E.	Do., do
" 2...	W.	121	15 47	145 36	E.	Passed Lagrange Tenian.
" 3...	N. 84 W.	145	15 55	143 06	E.	Light.
" 4...	N. 77 W.	120	16 22	141 06	S. E.	Baff., 6 hours calm, each squally.
" 5...	N. 88 W.	74	16 28	139 50	S. E. to N. W.	Light and squally, thunder and lightning.
" 6...	N. 80 W.	84	16 41	138 13	Variable.	Light, and all around.
" 7...	W.	99	16 41	136 31	"	Do., do.
" 8...	N. 84 W.	158	16 56	133 46	E.	Light and more steady, with squalls.
" 9...	N. 74 W.	128	17 23	131 35	E.	Light, variable and baffling.
" 10...	N. 86 W.	98	17 32	129 34	E.	Light, baffling and pleasant.
" 11...	N. 72 W.	126	18 11	127 48	E.	Do., do.
" 12...	N. 59 W.	120	19 13	126 00	E.	Light breezes and fine.
" 13...	N. 84 W.	148	19 27	123 24	E. S. E.	Moderate and pleasant.
" 14...	N. 79 W.	203	20 05	119 54	E. S. E.	Do., do.
" 15...	N. 75 W.	196	20 57	116 34	E. N. E.	Do., do.

" 16... **At midnight passed the Lema, and at 11 A. M., anchored at Hong Kong. Passage from anchorage to anchorage, 44 days and 22 hours. Distance sailed, 7,727. Royal studding-sails and sky-sails set since leaving San Francisco; never taken in; average per day, 171 miles.**

Abstract Log of Ship David Brown, from San Francisco to Hong Kong.

Date.	Course.	Dist.	Lat.	Long.	Winds.	Remarks.
April 1...	S. S. W.	108	36 17	123 55	Baff. and calm, west.	1st and 2d, small breezes and pleasant. Sailed in company with ship Romance of Seas at 5.50, outside and clear of bar. Made sail and passed the Romance of Seas at 9 A. M. Romance of Seas 12 miles astern.
" 2...	S. S. W.	134	34 09	124 39	W. by S., baff. and calm.	Calm and foggy. Lost sight of Romance of Seas.
" 3...	S. S. W.	120	32 29	125 59	N. W. to W., baff. to N. E.	Baff. and calms, and thick fog all day.
" 4...	S. by W.	95	28 53	129 40	Baff. N. W. to W. to N. E.	Intervals of calms and thick fog.
" 5...	"	210	26 26	133 31	Baff. N. to N. W. to N.	Small breezes and fogg.
" 6...	"	254	23 26	136 42	N. to N. N. E. to N. E.	Moderate trades, cloudy and overcast.
" 7...	"	251	20 35	138 48	N. E. to E.	Do., do.
" 8...	"	207	17 50	141 00	N. E. to E. N. E.	Do., do.
" 9...	"	207	17 42	144 24	E. N. E. to N. E.	Do., do.
" 10...	"	195	17 50	148 24	E. N. E., E. by N.	Do., do.
" 11...	"	228	17 53	152 06	E. N. E. to E. by N.	Good trades, and pleasant all day.
" 12...	"	211	17 27	155 53	E. by N. to E.	Good trades, but light aport.
" 13 ..	"	218	17 52	159 54	E. to E. N. E.	Do., and pleasant all day.
" 14...	"	230	17 52	159 54	E. N. E. to E. by N	Do., do.
" 15...	"	267	17 52	164 35	E. by N. to E. N. E.	Good trades and pleasant all day, with passing squalls.
" 16...	"	287	18 01	169 37	N. E. by E. to E. N. E.	Good trades, and pleasant all day.
" 17...	"	257	18 00	174 07	E. N. E.	Steady, moderate trades, with passing clouds.
" 18...	"	245	18 10	178 24	N. E. by E. to E. N. E.	Do., do., and pleasant all day
" 19 and 20	"	213	17 59	177 53	E. E. N. E. to E. by N.	Moderate trades, and fine weather all day. Crossed opposite meridian.
" 21...	"	193	17 20	174 30	E. to N. E. by E.	Light trades, and pleasant all day.
" 22...	"	204	17 42	170 57	E. to E. N. E.	Light, with passing black clouds.
" 23...	"	199	17 44	167 28	E. N. E.	Moderate trades, and pleasant all this day.
" 24...	"	180	17 41	164 21	E. N. E. to E.	Do., do.
" 25.	"	207	17 30	160 44	E. by N.	Light and baffling, with showers.
" 26...	"	163	17 41	157 53	E.	Light and baffling. Pleasant all day.
" 27...	"	141	17 26	155 28	E.	Small trades, and fine and pleasant weather.
" 28...	"	141	17 16	153 00	E. to E. N. E.	Light and baffling.
" 29...	"	123	17 31	150 52	E. by S.	Calms, hot and pleasant.
" 30...	"	69	17 30	149 40	Calm.	Do., do.
May 1...	"	96	17 20	148 00	Calm, S. E. to S.	Calms, with pleasant weather
" 2...	"	57	17 26	147 00	Calm.	Do., do.
" 3...	"	78	17 31	145 38	E.	Calms, with intervals of faint cat's-paws.
" 4...	"	163	17 50	142 47	S. E.	Light and baffling, with passing squalls.
" 5...	"	95	17 57	141 07	E. to S. E.	Light and squally. Thunder and lightning.
" 6...	"	125	18 29	139 00	E. to N. E.	Do., Do.
" 7...	"	79	18 21	137 37	E. to N. E.	Calms, with intervals of light and baffling airs.
" 8...	"	193	19 07	134 20	E.	Light and pleasant, with intervals of rain.
" 9...	"	164	19 43	131 30	E. by N. to E. S. E.	Light and baffling, with torrents of rain.
" 10..	"	122	20 05	129 23	E S. E.	Faint airs, and pleasant weather and smooth sea.
" 11..	"	118	20 28	127 20	E. by S.	Faint airs, warm and pleasant.
" 12...	"	146	20 46	124 46	S. S. E. to S.	Do., with intervals of calms.
" 13...	"	192	21 10	121 22	S.	Moderate and pleasant.
" 14...	"	126	21 33	119 10	S.	Do., do.
" 15...	"	149	21 43	116 10	N. E. to N. N. E.	Calms, and pleasant.
" 16...	Light, baffling airs and intervals of calms all day. Midnight, made and passed in by Lema Isl. Daylight, large clipper ship astern. At 8, the above ship having a breeze, passed to windward of us, while we were becalmed. At 11.30, she anchored ; and at 30 past meridian we came to anchor close to the above ship, which proved to be the Romance of the Seas.					

Commercial and Financial.



NAUTICAL MECHANISM AND COMMERCE.

As the falling pebble in the glassy lake generates concentric waves, whose widening undulations reach the farthest shore even so the construction of a *ship* causes undulations in the *sea* of *commerce,* whose returning tide is felt in every department of trade, and spreads the smile of gladness on many a heath-clad hill. The nautical department of commerce develops the high destiny of man more fully than other branches of mechanical art, inasmuch as it preserves an equilibrium in every department of civilized life. The ship conveys the superabundant products to other lands, and, in return, brings that which our own soil and climate refuses to bestow; thus the farmer is protected by equalizing the demand and the supply, and the legitimate fruits of *genius* and industry are secured to mechanism and commerce. Maritime pursuits have a welding influence on society, binding families, communities, and nations into one social compact. Throughout the wide range of human sympathy, there is no subject better calculated to arouse the energies of the soul than those connected with maritime pursuits. There is no subject connected with the physical employment of man, in which the *tender* and the *terrible,* the *soft* and the *sublime,* find such ample scope, in scenes which a pencil

might *portray*, but which a *pen* cannot describe. It is not our province to freight the reader's mind with the *consequent* hope and fear that fill a father's heart, as he takes a last lingering look at the departing ship that holds his only son; the sympathies of our nature forbid a pause to catch a subduing glance at the *scalding tear* as it furrows a channel down a mother's cheek, much less can we bear the unwelcome tidings that her darling boy has found a *winding-sheet* beneath the *dark-blue wave.* We forbear to open a vein of thought that shall wring drops of liquid anguish from many a parent's heart. There is a community of interest *clustering* around this proud emblem of mechanism and active life that defies descriptive significance, that is vast as the career of man, and wider than the boundaries of civilized life. Do you ask the testimony of by-gone days? Reader, come go with me through a pelting snow-storm to the ramparts of *Plymouth Rock,* and with becoming sensibility to our position let us inquire of the disembarking *pilgrims,* whose blurred foot-print indicates a pause to reply,—What are the spirit and developments of maritime commerce? With due deliberation they will tell us that language is inadequate to describe their importance, and that numbers fail to express their value. With such testimony, we leave the cherished spot. Without the aid of maritime mechanism and nautical astronomy, commerce would be as powerless as a *moonbeam* upon a *mountain* of *ice;* as water becomes stagnant when without motion, so commerce becomes enervated without nautical mechanism. What folly to heap up the superabundant products of the *field,* the *forest,* or the *mine,* by means of canal and railroads, without ships! Away, then, with the absurd notion that mechanism can find a market for her manufactures without vessels. It was with this mutual understanding that *steam* (since the days of Watt and Fulton) has honored all the drafts of commerce; the shuttle now spurns the hand that first gave it motion, and is only content to be guided by this sovereign of every land; the mill that wearied with the ebb of every tide has left the lubric stream, and is not content without the aid of water in the vaporous form. The woodman's axe receives a new impulse; the rafts of timber that gorged the streams of the surrounding coun-

try, adjacent to every mill, waiting in turn the swelling rain or the flowing tide, have disappeared through the fiery jaws of a thousand steam-mills, and is freighted in deals to *every land.* The *plane* once performed the measured track, followed by the muscular arm of the artisan at the bench; in vain the demand urged a more plenteous supply; fourteen hours of incessant toil found the weary operative still behind the demand, and at the end of a laborious week of *long days* and *short nights*, his jaded limbs welcome a day of rest. Time wheels on, while the augmented interests of both mechanism and commerce, loaded beyond endurance, seek beyond the orbit of *physical* labor, to perform the drudgery of art; and, coeval with the planing mill, and without legislative enactments, the hours of *labor* are *abridged.* STRANGE TO TELL! that while the teemless, timorous man, numbering a unit in the ranks of those who wear honors in the annals of mechanism, of which imperial dignity has been proud, is declaiming against the *progress* of *machinery* in the mechanic arts, the mechanic's wages have been increased, and his hours of labor reduced. Away, then, with the antiquated notion, unworthy of this age of progress, of mechanism, of intelligence, or of manhood. As nautical mechanism advances, it is developed in the facilities it affords for extending the boundaries of civilized life.

Nautical commerce can never be dependent upon the road to mill for the availability of her stock in trade; she measures *not* the probabilities of success by the number and length of turnpikes, rail or plank roads.

That *iron car,* whose *chariot wheels* are freighted with *furnace, fire, and smoke,* rattling its *iron sinews* with *reckless roar* alike through *sterile* waste and *fertile plain,* is but the prelusive signal for a more extended march in maritime pursuits; and though in the *giddy whirl shafts should break,* or wheels forsake their iron track, still they can only serve as a premonition to mark the progress of nautical commerce, or to *herald* the tidings of its success.

Ocean, with her angry wave, scowls in vain at the commercial *white-winged messenger* of *peace,* and the *steamship hurls defiance* at *Neptune's* menacing frown; and yet the *maritime prodigy* fails to meet the demands of commerce. MAP *out* the

earth in its globular form, and follow the line of the American Continent, with an extent of sea-coast that would encircle half the globe, and can you then wonder how civilization and commerce are developed by maritime pursuits? When we contemplate the various gradations of progress in civilized life; the variety of phases presenting themselves to the mind since the induction of commercial intercourse among men, we cannot but admire the beauties of *mechanism*, as exhibited in nautical enterprise and maritime knowledge. We may endeavor to roll back time's progressive car; and dissolve centuries of the past in the crucible of history for the purpose of measuring the altitude of mechanism in *savage* life; we may follow the scintillations of light flashing athwart the horizon of a barbarous age; we may mount the car of progress, in its onward returning course through the silent regions of space; we may mark the altitude of mechanism in civil architecture, when at the zenith of its glory, when its monuments of mechanism seemed to defy not only the elements of nature, but of time, the destroyer, to outstrip the builder's hand. However remote our position in the past may be, however elevated our present locality, we cannot avoid the discovery that since the alliance of mechanism and commerce, the world has progressed with unmeasured pace. Commerce (and we allude now to maritime intercourse), with the aid of mechanism, is the universal alchymist; it converts iron into gold, and brings bread to the eater, as well as seed to the sower; it tunnels the mountain, it bridges the ocean, and brings the streams of intelligence to every mind. Commerce enters the very *clouds* of *heaven*, and wrests the power from the well-charged *thunderbolt;* it brings the chained lightning a loaded messenger, harmless at our feet; the murderer, the felon, or the forger, can no longer perform deeds of darkness, and hope to escape with impunity in running away by *steam*. But the mechanic and the *merchant* are not the only recipients of its benefits; all classes of society partake of its provisions, from the *monarch* to the *pauper*, from the *president* to the humble *citizen*, who earns his bread by his daily toil, whether clad in the garb of the *sailor*, the armor of the *soldier*, or the *aristocrat* in *gold lace;* all have felt the mutual dependence upon mechanism and commerce, as developed by maritime pursuits.

ABSTRACT OF FOREIGN COMMERCE AND NAVIGATION OF UNITED STATES,

FOR THE YEAR ENDING JUNE 30, 1853.

To show the extent of the foreign trade of the United States for the year ending June 30, 1853, and to what extent our own vessels are engaged in the same, we may refer to the following figures, found in the Report of the Register of the Treasury:—

Value of Domestic Exports in American vessels	$142,810,026
Do. do. in Foreign do.	70,607,671
Total value of Domestic Exports	$213,417,697
Value of Foreign Imports in American vessels	$191,688,325
Do. do. in Foreign do.	76,290,322
Total value of Foreign Imports	$267,978,647
Excess of Imports over Exports in American vessels	$48,878,299
Do. do. do. in Foreign do.	5,682,651
Total excess of Imports over Exports	$54,560,950
Number of American vessels cleared for foreign ports	10,001
Aggregate amount of their tonnage	3,766,789
Number of their crews—of men	145,254
Do. do. of boys	1,535
Total number of crews	146,789
Number of foreign vessels cleared for foreign ports	11,680
Aggregate amount of their tonnage	2,298,790
Number of their crews—of men	120,754
Do. do. of boys	1,560
Total number of crews	122,314

Average tonnage of American vessels cleared for foreign ports, is 376.6 tons each; average number of tons apportioned to each man of the crew, 25.6 tons. Average tonnage of foreign vessels cleared for foreign ports, is 196.8 tons each, being nearly one-half smaller than American shipping, and the average number of tons apportioned to each hand on board, is 18.9 tons, showing that we navigate one-fourth more tons of shipping with the same number of seamen.

It will appear from the figures above that foreigners do not share so largely in the import as in the export trade, and by far

the largest proportion of our excess in imported wares, over those exported, is carried in our own ships.

Number of American vessels entered into the United States from foreign ports, 9,955; their aggregate tonnage is 4,004,013; crews of men, number, 143,091, and of boys, 1,339—total number of crew, 145,430.

Number of foreign vessels entered into United States from foreign ports, is 11,722; aggregate tonnage is 2,277,930; crews of men, number, 123,053, and of boys, 1,536—total, 124,589.

Average tonnage of American vessels entering from foreign ports, 412.2 tons each; tonnage to each man, 27.7 tons.

Average tonnage of foreign vessels entering from foreign ports, 194.3 tons each; number of tons to each man, 18.2 tons.

From these figures it would appear that large vessels require smaller crews in proportion than small vessels, and the smaller the vessel, the more numerous the crew. It has long been a well-known fact that American vessels are manned by fewer seamen than those of other countries, and consequently our ships can afford to pay higher wages, and so command superior seamen. It is thus American waters become as inviting to the mariners of Europe, as American lands and villages to the peasants and mechanics of the same continent.

It will not be amiss to observe, in conclusion, that within the present century, a vessel no larger than the average of 10,000 ships, which now are engaged in carrying on two-thirds of the foreign trade of the United States, ranging at about 400 tons, was considered a monstrous fabric for the legitimate purposes of trade. But remitted to the amplitude of a New World, mankind have discovered new ideas of business, and larger fields for enterprise.

Here, the expansive orbit of observation supplies an inexhaustible fountain of adventure on the broad theatre of remunerating pursuits, and the financial man finds ample scope for his undivided energies. Nature herself has erected in our favored land the fulcrum for enduring progress, and bid commerce on oceans, lakes, and rivers equilibriate the forces of her destiny.

Statistics.

THE SHIP-BUILDERS OF NEW-YORK AND ITS IMMEDIATE VICINITY,

Alphabetically arranged, with a List of Vessels built since January 1st, 1854.

Builders, Class, and Vessels' Names.	Dimensions.			Tonnage.	When launch'd	Owned by.	Trade running in.
	Length.	Breadth.	Depth.				
BELL, ABRAM*—							
BURTIS, LEVINE*—							
COLLYER, THOMAS—							
Brig........Handy King,.......	120	31	16	500	Feb. 15,	Russell H. Post,........	Mobile.
Ship........Knickerbocker,.....	165	34	21½	1,000	April 22,	Stanton & Thomas,.....	New-Orleans.
Steam Tug. J. D. Secor,........	95	21	7	140	Mar. 21,	Collyer & others,......	Towing.
Steamboat.. Glen Cove,.........	200	32	8½	467	July 20,	Glen Cove,.............	N. Y. & Glen Cove.
COLLYER, WILLIAM—							
Steamship.. Cahawba,..........	—	—	—	2,200	Mar. 16,	N. Y., Mobile & Havana,	—
— ..Dredge Machine,...	—	—	—	80	April —	—	—
Steamboat.. R. L. Mabie,........	—	—	—	148	May 20,	—	Towing.
" ..Mercury,...........	—	—	—	208	June 15,	Livingston & Rogers,...	—
CAPES & ALLISON—							
Schooner... C. G. Waterbury,...	—	—	—	200	—	W. Cook,...............	—
Propeller... Marshall Nye,......	—	—	—	220	—	—	Havrestraw.
" ...Potomskia,.........	—	—	—	360	—	—	New-Bedford.
" ....Acorn,.............	—	—	—	200	—	—	Boston.
ENGLISH, JOHN—							
Steamboat.. Forest City,........	—	—	—	900	—	Portland S. Packet Co...	Boston to Portland.
" ..M. Sandford,.......	—	—	—	900	Aug. 29,	Hariet & Sandford,......	N. Y. to Phila.
Ferry boat.. —	—	—	—	450	—	Peck Slip Co............	Ferrying.
GRIFFITHS, J. W.—							
Steamship.. —	—	—	—	—	—	—	—
LAURENCE & FOULKS—							
Steamboat.. Neptune,............	120	22	7½	160	—	Peter Crany,...........	Boston Harbor.
" ..Commonwealth,.....	330	42	13	1,600	—	Norwich & New-London Steamboat Co.........	New-London.
" ..Henry Munsi,......	110	21	7½	150	—	A. O. Jackson,..........	Harbor Towing.
LUPTON & McDERMOT—							
Steamboat.. E. Morriss,.........	75	20	5	63	—	P Morris & Co..........	Tow boat.
" ..Catskill,............	80	22	6½	95	—	Charles Beal,...........	Ferry boat.
Barge.......None Such,.........	100	21	8½	150	—	Charles Holgate,........	Canal.
Bark........North Sea,..........	140	31	20	500	—	Funck & Mernskie,.....	North Europe.
PATTERSON, A.—							
Schooner... Lady Jane,.........	100	23	10½	210	Dec. 21,	J. Kushan & others,....	California.
Ship........William Layton,...	163	36	23	1,000	Jan. 1,	—	—
" ......David Hoadley,....	163	36	23	1,000	Feb. 6,	—	—
" ......F. B. Cutting,......	165	36	23	1,000	Mar. 16,	Russell H. Post & Co...	Havre.
" ......Jeremiah Thompson	217½	43	29	1,900	June 1,	Thompson & Stephens,..	Liverpool.
Schooner.... Emily Keith,.......	100	26	9	240	June 27,	M. H. Keith,...........	General freighting.
Ship........City of New-York,..	215	43	29	1,900	July 15,	Kingsland & Sutton,...	Liverpool.
PERRINE, WILLIAM—							
Brig........Ciudad Bolivia,....	115½	26⅔	12½	350	Jan. 14,	Harbeck & Co..........	General freighting.
Ship........Sunny Side,........	146	32	21	740	Mar. 2,	Calvin Adams,..........	" "
" ......John H. Ryerson,...	154	35 1-3	23	1,000	Mar. 15,	Hurlbut & Co...........	Antwerp.
" ......Henry Harbeck,....	146	32	21½	740	April 6,	Harbeck & Co...........	General freighting.
" ..... Francis A. Palmer,.	195	40	28½	1,600	Aug. 21,	Hurlbut & Co...........	Havre.
" ......Nuremberg,........	180	37½	24	1,200	Sept. 9,	C. Sagory,..............	N. O. and Havre.

* List not furnished.

Builders, Class, and Vessels' Names.	Dimensions. Length.	Breadth.	Depth.	Tonnage.	When launch'd	Owned by.	Trade running in
ROOSEVELT & JOYCE—							
3 mas. Schr. Penquin,	130	32	10	530	April 10,	A. A. Low & Brothers,	Canton.
Schooner...Emily,	110	28	9	265	April 25,	D. C. Freeman & Co.	Wilmington.
SMITH & DIMON*—							
SMITH, ISAAC C. & SON—							
Sloop......Olympia,	—	—	—	55	Mar. 3,	—	—
Steamboat..Ocean Wave,	—	—	—	300	Mar. 21,	Middletown & Shrewsbury Trans. Co.	—
" " —	—	—	—	60	April 27,	—	Southern Rive
Ship.......Tejuca, clipper,	—	—	—	470	May 20,	W. A. Sale,	—
Steamboat.. —	—	—	—	500	June 24,	Hoboken Ferry,	—
" " —	—	—	—	200	—	W. N. Doherty,	—
SIMONSON, JEREMIAH—							
Steamboat..Plymouth Rock,	335	40	13	1,700	May —	C. Vanderbilt,	Stonington.
" ..Magnolia,	235	33	23½	1,240	Aug. 22,	C. Vanderbilt,	—
SNEEDEN & WHITLOCK—							
Steamboat..Nelly Baker,	150	—	—	300	Mar. 29,	Boston & Nahant Steamboat Co.	Boston & Nah
" ..Metropolis,	345	—	—	2,300	April 20,	Fall River Steamboat Co.	Sound.
" ..Fall River,	165	—	—	350	June 24,	R. Borden,	—
" ..Young America,	180	—	—	450	Aug. 8,	New-Bedford & Nantucket Co.	—
" ..Cuba,	260	—	—	750	Aug. 19,	Mobile & New-Orleans Mail Line,	—
STACK, THOMAS—							
Bark.......Chanticleer,	115	26½	12	332	Jan. 7,	Freeman & Co.	New-York.
" ....Hannibal,	140	30	12	497	June 29,	W. B. Whitehead,	Suffolk.
" ....Clara,	144	32 1-6	18½	697	June 17,	Wakeman, Dimon & Co.	Southport.
" ....Ilva,	117	29	9⅝	289	May 2,	Maitland, Phelps & Co.	New-York.
Brig.......Emma,	91	23⅜	9	171	May 20,	H. K. Corning,	"
Bark.......Rebecca,	112	25⅝	11⅝	299	July 19,	Freeman & Co.	"
Brig.......Delafield,	95	24	9	183	Aug. 16,	H. Delafield,	"
STEERS, GEORGE—							
Yacht .....Julia,	—	—	—	90	June 15,	James M. Waterbury,	New-York.
Pilot boat... —	—	—	—	107	—	W. J. Murphy,	"
Ship.......Sunny South,	—	—	—	750	Sept. 6,	Napier, Johnson & Co.	China.
WEBB, W. H.—							
Brig.......Houston,	132½	30	14	600	Jan. 17,	Wakeman, Dimon & Co.	Texas.
Ship.......Cultivator,	190	40½	28½	2,000	Mar. 14,	J. O. Ward,	Liverpool.
" ....Harvest Queen,	188	40½	28½	2,000	May 10,	C. H. Marshall & Co.	"
" ....Thornton,	190	40½	28½	2,000	June 7,	Williams & Guion,	"
Schooner.... —	130	22	9	350	July 15,	W. H. Webb,	—
Steamship..Pelayo,	200	31	14	850	July 22,	B. Blanco,	Cuban.
WEBB, ECKFORD—							
Steamboat..Union,	—	—	—	200	May 26,	Fair Haven R. R. Co.	Ferry.
Ship.......Stingray,	—	—	—	843	June 3,	Wakeman, Dimon & Co.	—
WILLIAMS, ED. F.—							
Schooner....Franklin Nickerson,	100	28¼	9½	350	—	Dollner & Potter,	Georgetown,
" ..T. R. Allen,	97	28	10 4-6	255	—	Allen & Welch,	Southern Coa
Bark.......Almena,	150	32	19	706	—	Dollner & Potter,	European.
Schooner....Fannie Currie,	112	29	10½	305	—	John Currie,	Brazil.
WESTERVELT, J. A. & SON—							
WESTERVELT, AARON—							
WILLIAMS, JOHN T.—	*						
Bark.......	—	—	—	—	—	—	—

We have given in the above list such data as have been furnished at the builders' hands, and when are incomplete, or not furnished, the pressure of business has prevented in time for the present numbe

*** A steamship of 2,500 tons on the stock—no launch this year.**

We expect to give the list of vessels built by the following builders at the ports of Quebec, Bath, Boston, Warren, Bristol, Providence, R. I., Philadelphia, and Baltimore, in our next number.

Ship-builders of Quebec, L. C.

John Munn,
Thomas H. Oliver,
Andr. & Wm. Parke,
Horatio Nelson Jones,
Robert M'Cord,
J. E. Gingras,
Thomas Conrad Lee,
Pierre Valin,
P. Valin & Co.,
Theophilus H. Jean,
Edward Trahan,
W. G. Ray,
James Nelson & Co.,
Davidson & Gondie,
Jean Lemlin, Jun'r,
Louis Mercier & Co.,
Wm. Cotnam, Quebec,
Allan Gilmour & Co., Wolf's Cove,
Baldwin & Dimming, L'Ann des Mères,
David Vaughan,
William Richardson, Diamond Harbor,
Pierre Brunelle & Son,
Wm. Henry & Co.,
G. T. Davie,
W. R. Russell,
Lomas, Sewell & Co., Pointe Levy,
Hyppolite Dubord,
P. M. Hardy, Point aux Trembles.

Ship-builders of Bath and Vicinity, Me.

Thomas Harwood,
Jenks, Harding & Co.,
Trufant, Drummond & Co.,
Larrabee & Robinson,
Johnson Rideout,
Clarke & Sewall,
G. F. & J. Patten,
Wm. V. & C. Moses,
Wm. M. Rogers & Son,
Levi Haughton & Sons,
Lowell & Small,
Harrison Springer,
Berry, Richardson & Co.,
Hall, Snow & Co.,
H. & R. Hitchcock,
Curtis & Arnold,
Jas. N. Dinsmore,
Lemont & Robinson,
J. P. Morse,
Joseph Berry,
Wm. M. Berry, Bowdoinham,
S. V. Given,
Fuller & Adams,
Chas. Minop, Phipsburg,
Pearson Morrison, do.,
Lincoln Webb, Woolwich,
John M'Dougle, Boothbay,
John W. Weymouth, do.,
Stephen Sargent, do.

Ship-builders of Boston.

Adams & Andrews,
Bradford & Irving,
Brown & Lovell,
Briggs, E. & H. O.,
Burchsted & Leavitt,
Burnham, Andrew,
Darton, William,
Delano, M. P.,
Dillon, James,
Dolbeare, E. P. & Sons,
Hall, Samuel,
Holmes & Snelling,
Jackson, R. E.,
Kelley, D. D.,
McKay, Donald,
Philbrook, Albert R.,
Pratt, Jarius,
Sampson, A. & G. T.,
Simpson, James E. & Co.,
Whidden, A. G. & S. H.

Ship-builders of Warren, Bristol, and Providence, R. I.

Chase & Davis, Warren, R. I.,
Stanton & Skinner, Bristol, do.,
Daniel Foster,
Joseph Thompson, do.,
Salusbury & McLeod, Providence, do.,
Francis Allen, do.,
Charles Stimson, do.

Ship-builders in Philadelphia.

Vaughen & Lynn,
Vaughen & Fisher,
John K. Hammet,
Wm. Cramp,
Theodore Dirley,
Birely & Lynn,
Simpson & Neal.

Ship-builders of Baltimore, Md.

Hunt & Wagner,
Foster & Booz,
Horney & Meads,
Wm. & Geo. Gardner,
John A. Robb,
Abrams & Ashcroft,
Cooper & Butler,
R. B. Goodwin,
J. N. & P. H. Muller,
Andrew Flannegain,
John S. Brown & Co.,
Wm. & James Skinner,
J. P. Fardy & Bro.,
Thos. Hooper,
Sanks & Riggin,
Mitchel & Thomas,
Wm. Skinner & Sons,
Linthecum & Summers.

We shall depend upon receiving from the builders above named a complete list of vessels built since January 1st, 1854, in time for our next number, as promptly as it has been furnished by those of New-York.

TABLE OF

Tonnage built in the several States and Territories during the year ending June 30, 1853.

States and Territories.	Ships and Barques.	Brigs.	Schooners.	Sloops and canal boats.	Steamers.	Total number of vessels built.	Total tonnage in tons and 95ths.
Maine	132	70	133	10	7	351	118,916.67
New-Hampshire	9	—	1	—	—	10	8,666.11
Vermont	—	—	2	—	—	2	218.33
Massachusetts	73	1	126	3	2	205	83,015.15
Rhode Island	6	—	5	—	—	11	3,170.52
Connecticut	4	—	37	21	5	67	9,022.20
New-York	21	6	85	103	74	289	83,224.05
New-Jersey	—	—	30	22	6	58	7,107.71
Pennsylvania	1	4	28	102	56	191	31,539.07
Delaware	—	1	11	19	2	33	4,435.64
Maryland	15	9	97	—	1	122	16,901.38
Dist. of Columbia	—	—	—	42	—	42	2,743.64
Virginia	3	1	11	14	11	40	6,599.20
North Carolina	—	1	16	3	2	22	1,746.36
South Carolina	—	—	24	13	1	38	1,993.87
Georgia, Florida, Alabama, Mississippi	—	—	—	—	—	—	—
Louisiana	—	—	9	4	4	17	1,346.12
Tennessee	—	—	—	—	1	1	045.17
Missouri	—	—	1	10	11	22	3,583.60

States and Territories.	Ships and Barques.	Brigs.	Schooners.	Sloops and canal boats.	Steamers.	Total number of vessels built.	Total tonnage in tons and 95ths.
Kentucky	—	—	—	1	29	30	8,592.09
Illinois	—	—	7	2	—	9	1,158.35
Wisconsin	1	1	10	2	—	14	2,422.39
Ohio	4	—	28	23	35	90	21,213.36
Michigan	—	1	20	—	14	35	4,304.63
California	—	—	—	—	2	2	150.57
Indiana	—	—	—	—	9	9	3,455.81
Texas and Oregon	—	—	—	—	—	—	—
Total of each class	265	95	681	394	271	1,710	425,572.49

TABLE, *showing the Number and Class of Shipping built, and the Tonnage thereof in the United States, from* 1815 *to* 1854 *inclusive :—*

YEARS.	Class of vessels built. Ships and Barques.	Brigs.	Schooners.	Sloops & canal boats.	Steamers.	Total number of vessels built.	Total tonnage in tons and 95ths.
1815	136	224	680	274	—	1,314	154,624.39
1816	76	122	781	424	—	1,403	131,668.04
1817	34	86	559	394	—	1,073	86,393.57
1818	53	85	428	332	—	898	82,421.20
1819	53	82	473	242	—	850	79,817.86
1820	21	60	301	152	—	534	47,784.01
1821	43	89	248	127	—	507	55,856.01
1822	64	131	260	168	—	623	75,346.93
1823	55	127	260	165	15	622	75,007.57
1824	56	156	377	166	26	781	90,939.00
1825	56	197	538	168	35	994	114,997.25
1826	71	187	482	227	45	1,012	127,438.35
1827	55	153	464	241	38	934	104,342.67
1828	73	108	474	196	33	884	98,375.58
1829	44	68	485	145	43	785	77,098.65
1830	25	56	403	116	37	637	58 094.24
1831	72	95	416	94	34	711	85,962.68
1832	132	143	568	122	100	1,065	144,539.16
1833	144	169	625	185	65	1,188	161,626.36
1834	98	94	497	180	68	937	118,330.37
1835	25	50	302	100	30	507	46,238.52
1836	93	65	444	164	124	890	113,627.49
1837	67	72	507	168	135	949	122,987.22
1838	66	79	501	153	90	898	113,135.44
1839	83	89	439	122	125	858	120,989.34
1840	97	109	378	224	64	872	118,309.23
1841	114	101	310	157	78	762	118,893.71
1842	116	91	273	404	137	1,021	129,083.64
1843	58	34	138	173	79	482	63,617.77
1844	73	47	204	279	163	766	103,537.29
1845	124	87	322	342	163	1,038	146,018.02
1846	100	164	576	355	225	1,420	188,203.93
1847	151	168	689	392	198	1,598	243,732.67
1848	254	174	701	547	175	1,851	318,075.54
1849	198	148	623	370	208	1,547	256,577.47
1850	247	117	547	290	159	1,360	272,218.54
1851	211	65	522	326	233	1,367	298,203.60
1852	255	79	584	267	259	1,444	351,493.41
1853	269	95	681	394	271	1,710	425,572.49

Tonnage of the United States on the 30th of June, 1853.

	Tons.
The registered vessels employed in the foreign trade	2,103,674
The enrolled " " " coasting "	2,082,782
Vessels employed in the coasting trade under twenty tons	51,476
The enrolled vessels employed in the cod fishery	99,989
The " " " mackerel fishery	59,851
The licensed vessels under 20 tons in the cod fishery	9,238
The aggregate tonnage of the United States, June 30, 1853	4,407,010
Whereof, the amount of steam tonnage included in the registered tonnage, as above, employed in foreign trade	90,519
The amount of steam tonnage included in the enrolled tonnage, as above, and employed in the coasting trade, and on our lakes and rivers	514,098
Total in steam navigation	604,617

The increase of tonnage for the year ending June 30, 1853, is 268,570 tons. Sold to foreigners, 17 ships, 4 brigs, 14 schooners, and 3 steamers, in all 10,035 tons.

	Tons.
The amount of tonnage condemned for year ending June 30, 1853	9,609
The " lost at sea	45,670
The amount of tonnage built for the year 1853	425,572

LIST OF PATENT CLAIMS

IN MARINE ARCHITECTURE AND ENGINEERING,

Issued from the United States Patent Office for the Month of August, 1854.

Draughting and Modelling Vessels.—H. C. Deputy, of Michigan City, Indiana: I claim the application of diagonals to draughting and modelling all kinds of vessels propelled by steam or otherwise.

Also the principle by which the exact concavity of concave water-lines is determined, viz., by transferring the intersections of the water-lines, in the body plane, with each frame to half-breadth plan, as shown and described.

Submerged Paddle Wheels.—William F. Ketchum, of Buffalo, New-York: I claim the arrangement of the centrifugal wheel relatively to the charge and discharge openings of the casing and the division of the interior of the said casing by the partitions, so as to form the openings so that the wheel shall take in water at its centre, and discharge it out of said openings on each or both sides of the stern-post, as set forth.

Feed Water Apparatus to Steam Boilers.—Benjamin F. Bee, of Harwich, Massachusetts: I do not claim in boiler-feeders a water-chest and slide-valve operating in connection with a water supply vessel, and arranged so as to be self-regulating in keeping up a proper level of water

in a boiler, nor yet causing the steam from the boiler to act by pipe conveying it thereto upon the surface of the water in the supply-vessel to facilitate the discharge of water therefrom to the boiler.

But I claim the arrangement herein specified of the double slide-valve, water-chest, and steam and water passages, with the water supply-vessel, when the said supply-vessel is made to form a compressed air receptacle by the immersion of the supply-pipe below the top surface of the water therein, or the compression of the air in the supply-vessel being otherwise equivalently produced, and so that a strong atmospheric pressure is brought to bear upon the surface of the water to serve conjointly with the steam passing through the water-chest through pipes into the compressed air receptacle to establish that necessary equilibrium of pressure above and below the water in the supply-vessel to produce a flow, and whereby the effect by condensation or cooling of steam entering the supply-vessel is neutralized, and a more immediate and certain discharge of water into the chest insured, as set forth.

I also claim the method described of varying the height at which the water will be sustained by raising and lowering the chest and its attachments.

Refrigerators for Marine Engines.—Joshua Merrill and George Patten, of Boston, Massachusetts: We do not claim conducting the condensed steam or hot water through an annular space for the purpose of cooling it, as that has before been done.

But we claim our improved refrigerator or water-cooling apparatus, consisting of the concentric tubes, and the chambers above and below the same, combined and arranged as described, whereby the condensed steam or hot water is conducted into annular spaces separated into thin films, and brought in contact on both sides with cold surfaces, the cold water or cooling medium passing through one set of pipes and around the others, as set forth.

We also claim providing a separate vessel or receptacle, through which the injection water, drawn from the condenser by the air-pump, is made to pass before entering the refrigerator, so as to permit the oil to be separated and drawn off from the water, as described.

Bushing Sheaves for Ships' Blocks.—Wetherell Taylor, of Camptown, New-Jersey: I claim securing the bush to the sheave by fitting the flange into the recess on one side of the sheave, and the bevel-edged ring into the recess on the opposite side of the sheave, and swagging the bush on to the *bevelled* edge of the ring, as set forth.

Fan Blower.—Solomon W. Ruggles, (assignor to himself and A. R. Smith,) of Fitchburg, Massachusetts: I claim in the blast-wheel receiving air in two opposite directions at one and the same time, the application of a deflecting rib to the middle of, and so as to extend beyond the propelling surface of each of the curved wings of the blast-wheel, and formed so as to deflect the currents of air entering the wheel laterally in the opposite

directions, and prevent them from that contact or impulsion against one another, which produces the humming or buzzing noise, as set forth.

Safety Apparatus for Steam Boilers.—A. H. Judd, of St. Louis, Mo.: I claim passing the stem of the valve through an enlargement in the supporting tube, by which I am enabled to give short bearings to said stem for the purpose of preventing it from becoming fastened in its bearings by oxidation, or the action of the heat upon the earthy matter driven through the same when the valve is opened, and also for the purpose of producing a fuller and clearer sound when the valve is opened than is produced by the escape of steam through the ordinary gauge-cock.

I also claim removing portions of the sides from that part of the valve-stem which passes through its inner bearing aperture, so as to leave narrow-bearing surfaces to guide and steady the valve, for the purpose of preventing said valve-stem from becoming fastened within its inner bearing aperture, and also for causing a large volume of steam to escape and give the alarm when a lack of water in the boiler, or excessive heat of steam, causes the float to sink, as set forth.

I also claim combining the valve-stem with the float, in such a manner that when the float shall sink and open the valve, the valve-stem may be detached therefrom for the purpose of again closing the same, by simply giving a partial turn to said valve-stem by means of its handle, as described.

I also claim giving an alarm whenever the steam in the boiler is allowed to accumulate to a dangerous degree of pressure, by placing a plug of fusible alloy in an aperture in one end of the float, which is connected with my improved arrangement of gauge-cock, as specified.

Slide Valves for Steam Engines.—John Gleason, of Northfield, Vt.: I claim, first, the valve constructed as described, in combination with the cavities in the covering plate, and the enlargement of the steam parts, as set forth.

Second, in combination with the cavities in the covering plate, and the passages in the valve, I claim the safety-valve placed on the top plate for the purpose of allowing the steam to escape from the cylinder into the steam-chest, when the pressure in the former exceeds that in the latter.

Dies for Making Augers.—E. L'Hommedieu, of Chester, Connecticut: I am aware that the swaging of the lip and head of an auger by dies is not new; when employed they have not formed the whole of the hollow or recess of the auger head, as what was below the shank afterwards had to be removed by a file or chisel. I therefore do not claim the mere employment of dies in such way, to swage out the lip and head of an auger, and a part only of the recess or cavity of the head.

But I claim the peculiar arrangement of the shank entrance of the matrix, that face of it against which the hollow surface of the auger head rests and is formed, and the male die which forms the hollow or recess of

the head, the same enabling me to make an auger head, not only with the whole of its recess stamped or formed by dies, but having its shank at the proper turning angle with respect to it.

Dressing Ship Timber.—J. E. Crowell, (assignor to himself, Edmund Smith, and Charles T. Stickney,) of Salem, Massachusetts: Now as a principal feature of my machine in which I claim there is any particular novelty, is the mode of supporting and guiding the movable carriage which carries the timber that is to be dressed, such consisting in employing four movable rails, arranged and applied together, and made adjustable, so as to make the carriage, during the longitudinal movements, not only have a transverse dipping movement, but also a longitudinal dipping movement, or such movements as will enable it to present to the cutter wheels in a proper manner the waved surface to be dressed.

I am aware that in machines for turning irregular forms a pattern rail may have been used, or that a carriage may have been supported, so as to have vertical movements on stationary guide or pattern rails, but that straight rails arranged and made adjustable with respect to one another, and applied to a carriage so as to regulate its movements, as described, have been used, is not known to me.

I therefore claim this improvement as my invention in the machine set forth for reducing or moulding timber.

Multiform Moulding Plane.—Thomas Worrall, (assignor to Mifflin Paul,) of Mount Holly, New-Jersey: I claim the slide attached to a plane by means of plates and screws, which will make that plane capable of working all kinds of grooves, fillester, and mouldings.

A NEW TREATISE ON NAVIGATION.

We have been shown the manuscript and proof-sheets of a new Treatise on the Practice of Navigation, to contain about 400 pages, in course of publication by Capt. Wm. Thoms, late of the Merchant Service, and now a Teacher of Navigation at 18½ Cherry-st., New-York. It has been the object of the author to simplify the science, by discarding all matter which had not a direct bearing on the practice at sea, and by numerous diagrams enable the learner to comprehend mechanically, at one view, each case under consideration, both in Navigation and Nautical Astronomy. Many new tables have been introduced, with a view of shortening labor in computations; and as the work treats extensively on Practical Navigation, much original and useful matter has been added, which has been derived from the author's experience of more than 25 years in command of merchant vessels in nearly all parts of the world. The work will be dedicated to the officers and seamen employed in the merchant service of the United States.

Editors' Table.

INQUIRY FROM A CORRESPONDENT.

Messrs. Editors:—I learn from your Prospectus that you design furnishing the Calculations of Vessels in your Magazine. Will you (if consistent with your arrangements) explain the necessity of calculations; and, at the same time, publish those I find in the *Ship-builder's Manual*, published by the senior Editor? A. B. C.

[We cheerfully comply with the request of our correspondent, and shall be pleased at all times to answer any reasonable inquiry within the orbit of our ability. In exhibiting an analysis of vessels, we seek to introduce a correct mode of determining their qualities; not, however, by making an experimental voyage at sea, nor yet by following a familiarized eye with such forms as have been pencilled by fancy upon its pupil, or portrayed by custom on life's hereditary page. In the absence of, or without, calculations setting forth the locality of the various powers which must equilibriate or preponderate, work advantageously or detrimentally, to the safety of every vessel, regardless of her size, the manner of her rig, or the power by which propelled. The modelling of vessels, unaided by the science of numbers, could never raise the art of construction above the standard of doubtful utility. Without calculations, the model is a mere block of wood, the draft a monotonous routine of lines without an expositor, from which no tangible evidence is furnished. The calculations unfold at once the marvels which lie hid, like marble in the quarry. With this qualification, the sculptor has the model before him, and is required but to imitate; and as like begets like, even so the model and the man are recognized in their identity, and eulogy and renown become the sculptor's patrons. Could the chisel secure perfected art without the model, then would knowledge be commensurate with experience. *In the Fine Arts, infinite wisdom* has designed the model; while in Nautical Architecture, man is left not only to make his own models, but to imitate them in their expansion, governed by the same laws which guide the sculptor or the artist in developing their respective arts. When the truth breaks in upon the mind, and man ceases to forget, or learns that which he has never known in relation to creative art, he finds that much more skill is requisite to equilibriate the various forces which operate on a ship of the present day, in her trackless evolutions upon the ponderous deep, than is essentially requisite for the construction of the loftiest edifice that ever graced the solid earth, or the finest models of sculpture.

CALCULATIONS OF STEAMER JOHN L. STEPHENS.

Length on load-line	270 feet.
Breadth moulded	40.2
Depth from rabbet to gunwale	24.25
Launching water-line above base-line forward	6.27
Launching water-line above base-line aft	4.92

Displacement moulded below load-water line, taken at 13 feet above base, 70888.8 cubic feet = 2025.39 tons = 0.508 L. B. H., (or the exponent of displacement.) Displacement, total below line, 13 feet above base, 2,132 tons. Weight of hull, 720 tons. Displacement, centre of gravity, *aft* of middle of water-line, 13 feet above base, 6.11 feet. Displacement of centre of gravity, *below* 13 feet water-line, 5.55 feet. Area of 13 feet water-line, 7166.5 = 0.666 L. B. Centre of gravity of load-water plane, 13 feet above base, aft of the centre of length, 6.76. Area of dead flat frame, 464 2 square feet, = 0.9 L. B. Centre of gravity of dead flat section below load-line, 6.02 feet. Moment of stability = 686052.8 = $S \frac{2}{3} y^3 dx$. Metre centre above centre of gravity of displacement, 8.678 feet.]

EDITORS' CORRESPONDENCE.

EDITORS OF THE NAUTICAL MAGAZINE :—I have made up my mind to inquire whether you calculate to give the Sons of the Sea any sight for a yarn from your reel? I suppose you will have a great many other ports to make, but don't run by *Mariner's Bay* without dropping an anchor, or fastening a hawse. Having the deck of a fine ship, we feel like asking whether you would consent to publish minutes from the "log," if they were furnished, that all hands may see what weather can be made, and what ships best deserve the confidence of the sailor?

Yours, STARBOARD TACK.

[We assure our correspondent that it is our intention to make this Magazine not only attractive, but instructive, to every member of the maritime interest; and we shall at all times be happy to publish the "logs" of ships, whether sailing or steaming; and our friends who desire to secure a permanent record of the performances of their favorite vessels, may not only be gratified to obtain the medium of our pages, but will place us under many obligations by furnishing the same.

By pursuing this course, we shall at once be enabled to institute comparisons of ship with ship, and so "log" our progress in commercial mechanism. At the end of the year we would be able to present a very interesting table of performances at sea; and we hope all our friends who feel moved by the spirit of our correspondent will enter the lists, beginning with the next number, and be careful to furnish all the conditions of lading, trim, &c., with the name of the owner, master, builder, and engineer.]

D. F., of I., Me., and several others, have been addressing inquiries to the Senior Editor, to know whether he is still publishing the "*Manual*,"

or any monthly journal on ship-building. The "*Manual*" is completed, (see advertisement on the cover.) This Magazine is the only publication which we are now engaged in publishing, and we hope that all who have been our former readers will find in it all they can desire farther, upon the great subject of commercial mechanism.

EDITORS' NOTES OF NEW VESSELS.

Sunny South.—New-York, September 7th, launched from the ship-yard of Mr. Geo. Steers, the clipper ship "Sunny South," of about 750 tons.

This is the last and largest craft built by the celebrated builder of the yacht *America*, and is designed for the China trade. She is owned by Napier, Johnson & Co., and will be commanded by Capt. Michael Gregory. Having been eminently successful in modelling and building the various descriptions of pleasure boats, yachts, and pilot boats, Mr. Steers has not thought it necessary, in building *boats* of a larger size, to exchange his experience for doubtful dogmas of nautical art, but has boldly applied the same principles to the models of ships that had secured admirable sea-qualities, in unison with grace and symmetry, in the outline and proportion of smaller crafts. All who have made the models of this builder their study, in various parts of the world, will have a tolerably fair conception of the form of this vessel, when they understand that she is only expanded in size, and built deeper, than vessels for mere pleasure purposes would require.

The dead flat frame, of which there is but one, is placed quite as far aft as midships, with a large degree of dead rise, and "tumble home" above the main breadth. The keel and stem are blended in an easy and graceful curve, as in the *America*, and finished into the carved folds of a hideous sea-serpent. The knight-heads curve forward, and the bulwarks twist gracefully aft to the cat-head, where the side begins to tumble home on a convex side-line to the taffrail. The stern-post is upright to the keel, defining a very clean run to the counter; the bulk of the ship's body is amidships, consequent upon sharp, hollow water-lines, and extremely light ends. The bow is exceedingly thin and sharp, and the fore body presents a capacious convex lifting plane to the impinging columns of the fluid. This is a property of easy section and diagonal lines, and calculated to sustain the leverage of sail under a press of canvas, and keep the foreship dry by keeping above the sea. Bows like this skim like a shell, and cut as a knife.

The aft body exhibits most of rotundity, with a short, rising transom, fine quarters tumbling home to the taffrail. The stern rakes handsomely, and is finished in yacht style.

The rising bottom, arching bilge, and convex side-line, supplies at once strength and adaptation to the oscillating element. Her bottom is var-

nished up to load-line, and top-sides are black. Although a ship of fair size, yet the symmetry of shape is such as to make her appear to the eye at least one-quarter less in bulk than many other examples that loom up to their full size.

The *Sunny South* is not heavily timbered, but is greatly strengthened by diagonal plates of iron upon the inner surface of the frame. She is provided with facilities for working a few guns on deck, and may either *fight* or *run* as occasion calls. We may add, that very high expectations are entertained as to her performances, and it will give us pleasure to chronicle the confident predictions of her friends.

REGATTAS.

We have no doubt the performance of sporting craft will interest our readers, so we give below the latest achievements.

Lake George.—An interesting and exciting contest was decided Aug. 31, between three row-boats.

Distance to be rowed was three-quarters of a mile out into the Lake and back again. Three boats entered—their names were:—

Izaak Walton, two-oared gig	Time,	5	minutes.
Julia	"	5½	"
Harriet and Maria	"	5¾	"

A match took place the other day between two New-York Market sail-boats, 18 feet long, the *S. C. Foote*, from Whitehall, and the *Prize of the Market*, from Fulton Market. The course was from Thorne's Dock, Brooklyn, round Fort Hamilton, and back, a distance of 17 miles, which the *S. C. Foote* accomplished in *two hours and four minutes*, with the breeze blowing freshly from the northwest, coming in winner by about two miles.

Regatta at Stonington, Conn., Sept. 5th.—The race was open to vessels and boats of all sizes, under three classifications, and two prizes for each class, consisting of a purse of $100 and a fine telescope, for the first-class; purses of $50 and $30, for the second; $30 and $20 for the third. Distance to be sailed, 30 miles out and back; and, according to the regulations, to be accomplished in six hours. Twenty-four entries were made—of *first* class, *four*; *second* class, *eight*; and the *third* class, *twelve* boats.

The boats started from the breakwater at 11, A. M. The contest was sharp, and the results very close; but the time occupied by the first-class boats exceeded the stated time by five minutes, and on the next day they repeated the race. The *Washington*, built by Mr. Fish, of New-York, was the first to reach the stake-boat, and was five minutes in advance of the next best sailer, the *America*, of Philadelphia, and these two were declared entitled to the first and second prizes of the *first class*.

The judges decided the winners of the *second class* to be the following:

	TIME. H. M. S.
First prize of $50 to the *Nammeang*, of Greenport	3 45 13
Second prize of $30 to the *R. F. Loper*, of Stonington	3 47 43

Of the third class the winners were—

First prize of $30 to the *Cygnet*, of Mystic	4 12 13
Second prize of $20 to the *Little Madge*, of Stonington	4 9 45

ACKNOWLEDGMENTS.

We acknowledge our obligations to Andrew Flannegain, Esq., ship-builder, of Baltimore; James Jarvis, of Va., Naval Inspector; Daniel Foster, Esq., ship-builder, of Warren, R. I.; Messrs. Kendall, Richardson & Co., ship-chandlers, Bath, Me.; Vaughan & Fisher, ship-builders, Philadelphia; Heron & Martin, ship-owners, Philadelphia; H. N. Jones, Esq., ship-builder, Quebec; and A. A. Low & Bro., ship-owners, New-York, for valuable information.

Our thanks are also due to Scripps & Bross, of "*Democratic Press*," Chicago; J. J. Henderson, Esq., of "*Democracy*," Buffalo; Joel Knight, Esq., of Boston; and Peter Stubbs, Esq., Patent Agent, St. John's, N. B., for signal favors.

CORRESPONDENTS.

It affords us pleasure to announce the name of John J. Henderson, Esq., of Buffalo, as a regular contributor to the Statistical Department for the chain of Northern Lakes: and J. E. Tuel, Esq., in the same department for this city. Peter Stubbs, Esq., of St. John's, N. B., will contribute much interesting information from that section of British North America; while Tom Cringle, on the River St. Lawrence, will keep us well advised of his *whereabouts*. Old Salt will cruise the entire coast, and by nautical observation bring us something valuable for that department; while Mirror has promised to reflect all the discrepancies that come within the orbit of his vision.

The Nautical Magazine will be published on the first of each month, and printed with good type, on durable paper, adapted to binding in semi-annual volumes of nearly 400 pages each, containing original reading matter, illustrated with engravings.

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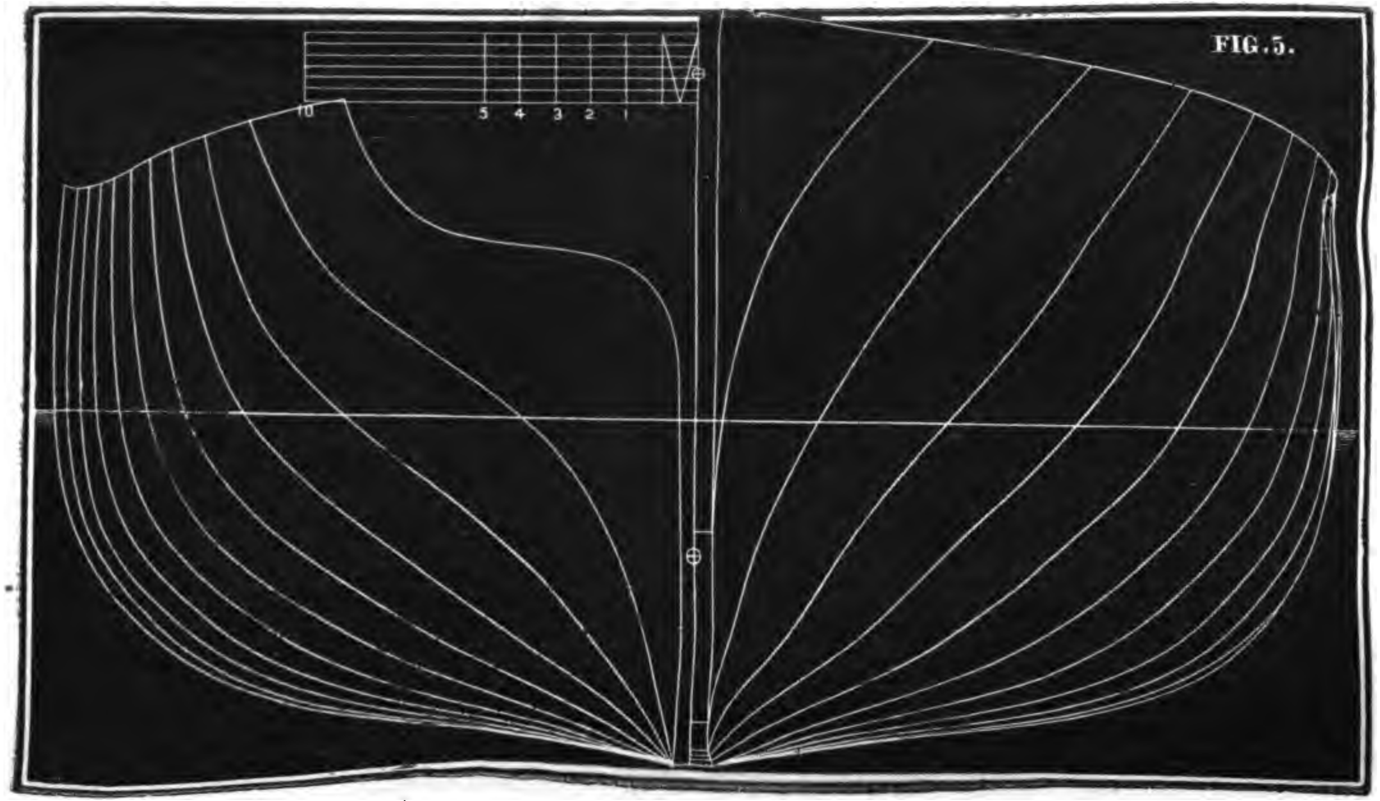


FIG. 5.

THE

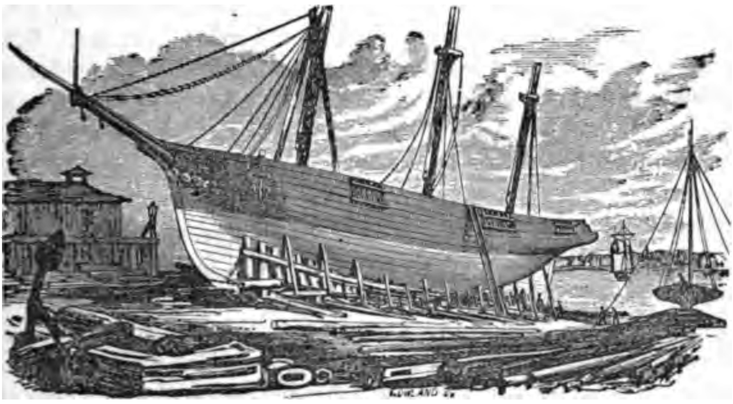
Monthly Nautical Magazine

AND

QUARTERLY COMMERCIAL REVIEW.

Vol. I.] NOVEMBER, 1854. [No. 2.

Mechanical Department.



INLAND NAVIGATION.—No. II.

Not to the proud ocean alone, with its rock-bound, surge-beaten shore, heaving its huge billows in terrific grandeur, or bearing in pride the swift, majestic ship upon a salt-water crest, is the contest for victory in maritime enterprise to be confined. Another vast race-course is imbedded in our continent, upon which the grand nautical struggle of the age has found spirited champions to conduct its manœuvres with nerve and intelligence. The clear, fresh waters of our inland seas afford a theatre for triumphs in marine architecture and nautical skill, through wise application of scientific principles in building,

in noble daring and keen observation in navigation, quite as important to the great States contiguous to their refreshing breezes, as any that can be offered to their sisters on the salt seaboard.

The history of the fresh-water marine of the United States, could it be written, would not be found without stirring interest. Its commercial as well as *naval* memories would recall a series of achievements, of which we may be equally proud in a national view, from the time the first exploring barge ploughed her wake through the placid waves, till steam was introduced. The watch-word has been progress, from the date of Perry's victorious battle on the wilderness basin, until the snorting locomotive has now come down upon the fertile banks, bellowing to its kind, which is puffing in every *creek* that waters the growing seaports leaping into existence a thousand miles from sea. The modest schooner first led the way, as schooners have ever led, to fortune and bolder enterprise. Then the brig, the steamboat, the propeller, the bark, and the monster steamer. Population and wealth have long since demanded railroads, for the purposes of a swifter conveyance of persons and property; and the rapidly developing condition of our Central States still calls for an equally rapid augmentation of commercial facilities. A *cheap* and *rapid interchange* of the abundant products of these States with the world around them, is an essential condition of commercial prosperity, and the only basis on which they can build an emporium of commerce which shall shape the destinies of the fertile West and their common country. Nature has furnished an ample highway to the ocean, which, by the arbitrary exactments of British statesmen, has, until now, flowed in vain for the evident purpose it was in part intended. But this obstacle is now to be removed, and our lake-freighted vessels may yet pour down the St. Lawrence in hundreds, bound for the markets of the whole world.

The physical prosperity of the West has already become indissolubly connected with commerce, and its chief ports will become the theatre of augmented bustle and business when the great channel shall be opened to the Atlantic for American enterprise.

Therefore, whatever adds to the efficiency of shipping by greater burden, strength, and speed, will be hailed by the soil. the mine, the forest, the manufactory,—each, all, and every interest,—as a fresh accession of wealth and supremacy, by enhancing the elements of commercial power. For the purpose of a *cheap* and *rapid interchange* of products with the East, marine transportation has hitherto stood unrivalled, and, as we believe, is destined still so to stand, till the last cargo is freighted, navigation is closed, and shipping operations come to an end. But nevertheless, there are those whose interests are shackled to the rolling locomotive on the iron track, who fain would be but too happy to esteem their favorite "*car*" the fortunate *rival* of the white-winged vessel on the track of foam. It is thought they anticipate the time when rail carriage will gain the ascendency, railroads assume the sceptre, and our present prosperous commercial cities become but gigantic way-stations upon the vast lines of Eastern and Western trade.

We have no fears of such a result. Marine architecture is susceptible yet of numerous and wonderful improvements, and the exigencies of the time will wake them into life. Nature has given us the wind and the wave, and only mechanical and nautical skill is wanting, when *capital* bids, to outstrip every competitor in the field, whether in *cheapness*, *safety*, or *speed*, in bearing the products of industrial energy to the markets of the world. The superiority of our inland marine over railroads for the transportation of freight will most clearly appear, as we increase the *size* and enhance the *speed* of vessels. These improvements are alone sufficient to maintain the balance of rivalry. And let it not be thought that the draught of water will frustrate the designs of larger vessels. Ten feet is sufficient for 1,000 tons.

As shapes have a clearer significance than signs, and investigation is rendered inviting by observation, we have given to the *eye* the body-plan draught of a first-class lake vessel in fig. 5 of the present volume, and shall furnish the rig in fig. 6 of same. This vessel is designed to embody, both in fact and form, the principles which we endeavored to lay down in a former article, and will be found of the following dimensions:—

	Feet.
Height of load-line of construction above base	9.42
Length on ditto between rabbets	169.58
Breadth moulded at dead flat frame	36.
Depth from rabbet to gunwale at dead flat frame	16.

These are the principal for which the ship-builder would inquire; but the world, without the pale of mechanical attainments, would not feel to be in possession of any satisfactory information upon the topic of dimensions, unless the *length of keel* and *depth of hold* were exactly defined in feet and inches. A few remarks may enable the uninitiated to comprehend the inexpediency of determining the length of keel as the measure of a ship's length; for while it is true that many vessels have a keel ending abruptly under the fore-foot, there are others which unite the keel and stem by a curve continuous and easy,—so blending the vertical with the horizontal back-bone of the sled-runner vessel, that the prince of puzzlers would be all adrift in locating the point where one began or the other ended. Moreover, the rake, which may be in curved or straight lines, destroys the value of the investigation, although the corner of the fore-foot remains, and the amount of rake is exceedingly varying, according to caprice or fashion, on both ends of the vessel; so that the length of keel, without a knowledge of the rakes and curves of post and stem, conveys a very indefinite idea of a ship's length. On the other hand, the length taken on the load-line of construction averages at once the mean length of the vessel from wood ends to wood ends. The depth of hold is equally vague and indefinite respecting the measurement of depth. It varies fore and aftwise with the sheer of the vessel, and depends on the location of the hatch, the thickness of the ceiling, and the crown of the beams. It may or may not show, within a handful of inches, the *exact* condition of depth. If the vessel have a large sheer, the depth of hold appears the same, as it is usually taken in the same manner as if the sheer were less. If the vessel have a large amount of dead-rise, the hold is made to appear very deep in figures, though capacity may be very limited in comparison with a shoaler vessel having a flat floor. The measure we have shown for depth is all that is of any real utility in commercial

Foremast, 67.50 ft.—head off, 11.2 ft.; yard, 68.85 ft.—arms off, 9.50 ft.
Foretop-mast, 40.5 ft.—head off, 6.75 ft.; yard, 55 ft.—arms off, 9.50 ft.
Foretop-gallant, 21.4 ft.; yard, 41.25 ft.—arms off, 5.16 ft.
Fore royal, 14 ft. + 7 ft. pole; yard, 30.93 ft.—arms off, 4 ft.
Mizen-mast, 85 ft.—head off, 14 ft.; topmast, 36 + 12 + 6 ft. pole.
Bowsprit outboard, 17 ft.; first jib-boom, 15 feet; 2d do., 11.25 ft.
Flying jib-boom, 7.50 ft. + pole, 3.75 ft.
Main staysail boom, 62 ft.—pole off, 2 ft.
Main boom, 39 ft.—pole off, 1 foot; gaff, 33 ft.—pole off, 3 ft.
Mizen boom, 48 ft.—pole off, 3 ft.; gaff, 31 ft.—pole off, 4 ft.

CALCULATIONS OF RIG.

Area of leading sails, or those on which the centre of effort is found marked, = 13147 square feet. Number of square feet of sail to the ton of load-line displacement, = 15.60 feet. Centre of effort of sails forward of centre of length of water-line, = 2.75 feet; forward of centre of buoyancy, 4.60 feet. Centre of effort of sails above load-water line, = 50.69 feet. Vertical moment of sails, = 666463. Vertical moment of sails = moment of stability × 1.70, which is a small amount of sail in proportion to the vessel's stability,—the latter being very great, but a fair apportionment when we consider the displacement, and the ease of the lines of resistance.

We may add, that the rig is not taunt, when we compare the great breadth of beam, and consequent spread of the rigging; the bowsprit is short, and the jib-booms may be well guyed, as the bow is sufficiently full on the rail to afford ample spread. The jibs are so shaped as to stand well when the sheets lead in a line drawn from the centre of effort through the clue of the sail, as this is the correct principle to get the foot and after leech to stretch alike. In shaping stay-sails, jibs, and all triangular sails, it should be an object to cut down the length on the stay to the shortest practicable limits, so as to dispense with all unnecessary hoist and down-haul, and to get the sail in a body, that it may be handled and trimmed with dispatch.

NAUTICAL ARCHITECTURE AT THE MARYLAND INSTITUTE.

The Seventh Annual Exhibition of the Maryland Institute is, in many respects, highly creditable both to the Institution and to the State. We would gladly step aside from our orbitual province to call the attention of our readers to other depart-

ments of the exhibition than those of the maritime interests, inasmuch as this department is the least interesting, consequent upon the entire absence of models of marine architecture, if we except two models of yachts from this city, (the yacht America and that of the Ocean Crest.) The Navy Department, or one of its branches, exhibited a number of the models of vessels, forming a part of the Navy of the United States, in addition to the models of two propellers, which, it is proposed by the projector, shall form an addition to the propeller force. We shall speak of the models in the order in which they are arranged in the Catalogue, without reference to the arrangements of the hall. No. 5 purports to be the model of a first-class propeller of fifty guns. The prominent defects in this model are great overhang of stern, fulness and unfairness below water, forward. A second-class propeller model, by the same hand, is decidedly the best model for speed and sea qualities; but unfair in the lower water-lines, and a fulness on the extremities of all the lines, which, with the frowning effect of a heavy stern, counterbalances, in other respects, the effect of a good model. The sloop of war Plymouth, of twenty-two guns, was also made by the same hand. Whatever may have been the performance of this vessel, it requires the possession of no great amount of either science or practice to discover that the posterior part below water is the best end of the vessel; the bow is full, with but little lifting power; her quarters are unnecessarily heavy, which deteriorates the appearance of the after body very much.

No. 6 comprises the model of the frigate Congress, of fifty guns, and sloop of war Saratoga, of twenty-two guns, by the same hand. The Congress has a good after end below water, with heavy buttocks and straight side-line; full forward, below, and above water; the greatest transverse section too far forward; would be much improved with the bow carried out, both in speed and other sea qualities. The model of the Saratoga is far from being even passable. The order of discrepancies is reversed on this model; the bow is the best, and although quite unfair, it possesses the elements of ease and a tolerable degree of speed; the sides and bottom are straight in their length; after end below water reduced to a complete skeig.

No. 7 purports to be the model of the frigate Constitution, commonly known among seamen as the "Old Iron Sides," and, judging from her signal success in the war of 1812, this appellation contrasts favorably with her conquests from among the list of wooden walls. The model of this vessel affords a fine study for the naval architects of the present day, inasmuch as the vessel was projected during the past century, when the science of ship-building in the United States, to say the most of it, was only commensurate with experience in nautical mechanism. How many inferior-modelled vessels have been built, condemned, and, consequently, abandoned, since this vessel was launched, it is not our province, at this time, to inquire. The most unsightly feature of this model is the abrupt projection in her load-line of flotation, immediately under her quarter galleries and her low transom, at the ends; the fulness in her diagonal lines forward is compensated, to a great extent, by the rake of her stem, giving her no inconsiderable amount of lifting power.

No. 8 represents the model of the sloop of war Germantown, of twenty-two guns. This vessel has a singular want of adaptation in the two ends, great inequality in the lines of flotation when with any considerable degree of list, particularly aft, heavy quarters, and a moderate degree of lifting power forward, consequent upon some rake to the stem.

No. 9 purports to be the model of the ship of the line North Carolina. Whatever remarks may be deemed applicable to this model will apply equally well to the Delaware; these models are so similar, that they may, if made for opposite sides, be regarded as twin models. These models are full, in the most common acceptation of that term; have a double bilge, and the greatest transverse section well forward. The manifest incongruity of that abrupt terminus denominated the bow, is modified somewhat by the rake of the stem. The heavy stern and ponderous buttocks, with straight side-lines, are in keeping with the double and stern galleries. If those ships ever render the government efficient service, it will be after they have been razeed, as was the Independence.

Upon the merit of the same number hangs the model of the frigate Potomac, pierced for fifty guns. This model has the

double bilge, hard load-line at each extremity, greatest transverse section well forward, with considerable rake below, lean aft, below water approximating the skeig.

No. 10, model of the sloop of war St. Mary's, of twenty-two guns. Great preponderance of buoyancy in the fore-body; very lean aft, too much so to be fair. This vessel is said to sail well, and no doubt she does, when alone, or in company with vessels of her class.

No. 11, model of brig Truxton, ten guns. This model, fifteen years ago, would have been regarded as something more than ordinary; but the day has past when a very great preponderance of buoyancy forward can be regarded as belonging to a shape adapted to speed, or as the index to ease and regularity of motion at sea. Of all the classes of sailing vessels belonging to a navy, this class should possess unmistakable qualifications in relation to speed. Degrees of dead-rise furnish no index to the angle of course when sailing upon a wind, but is often a bulwark against entering a shoal harbor, when in pursuit of a foe; we have yet to learn that the vessels having the most dead-rise are the best sailers. This vessel, although fine when adjudged by the prevailing standard at the date of her build, is not what the navy now requires.

No. 12 was formed on a model purporting to be that of the sloop of war Portsmouth, of twenty-two guns, almost a fac-simile of the Plymouth. The after-body has a slight advantage. If there should be found to be any decided difference in the performance of the two vessels, the management of the vessel, and the locality and distribution of sail, would furnish the secret of success in the victor.

It is a most singular fact, that in the whole collection of models representing war vessels, with scarce a single exception, there are none fair; the real shape or form of the vessel, in almost every case, is mantled by some protuberance, or the proportions were marred by some unnatural recess in the plane of rotundity. No language is, in our judgment, too strong to set forth the folly of an attempt to determine the resultant of shape from an unfair model, and such discrepancy should always meet with a decided rebuke, whether emanating from the apprentice or

the naval constructor—the young aspirant or the builder of hoary years.

Before leaving the Naval Department of the Exhibition, we must not omit the steamer Powhattan, whose model was also exhibited. This steamer has been regarded as the finest in the navy. Her claim to superiority we have no desire to dispute, and, in relation thereto, have only to say, that if true, it is much to be regretted, not only that the government has so few steamers, but that the Powhattan, after so many years spent in her construction, is so far behind the age in ocean steam navigation. We could not discover the full development of a single element of success embodied in her construction; hard lines of resistance, heavy draught of water, and small wheel—qualities always to be repudiated in side-wheel steamers—are prominent features in her construction. We remember an account furnished of the result of her trial trip by an engineer; it was stated that she made fifteen miles per hour on that occasion; the number of revolutions was also given in connection with the diameter of the wheel. It required but a few figures to determine that (if correct) she must have ran quite as fast as the periphery of her wheel, at the outer edge of the bucket or paddle, annihilating the resistance of both vessel and machinery, and setting down the altitude of both science and practice at zero.

On the left of the main entrance on the first floor of the hall, hung the model of the yacht *America.* Upon a proper plane of projection, and at the same height, hung the model of the *Ocean Crest,* evidently made upon the same scale, and representing the opposite or larboard side of the vessel, which enabled the visitor to feed his vision and indulge his fancy in speculations of a superior cast upon the great problem of resistance. While indulging the optics of our own dear self, we felt proud of the Empire State standing, not only acknowledgedly throughout the commercial world *Excelsior*, but at the fair of the Maryland Institute avowedly so, in the maritime department. The yacht *America* is too well known to need a word in this connection. The *Ocean Crest* has more absolute and less lateral resistance, with a better after end for heavy weather. The

America would be more than a match under almost any circumstances, and being larger, would have additional advantage in this particular. The moments of stability, however, would have some weight in a contest, and without those points from which to determine still farther, we forbear to speak.

At the particular request of a member of the Institute, we shall not, to any extent, expose the pretensions of a list of exhibitors which do no credit to any exhibition of art, from the nondescript made with an ordinary jack-knife to the ship of the line, which requires a label for even a nautical mechanic to discern for what it was designed; an incongruous mass of materials is exhibited in the prominent parts of the hall, and because no place can be found on the round earth to which they properly belong, forsooth it is assumed that they must belong to the nautical department, and are set down in the Catalogue accordingly. We protest, in behalf of science and mechanism, against the noblest art within the orbitual province of genius being brought into disrepute by such caricatures. No model of a vessel, whether real or imaginary, should find a place in the department of nautical mechanism at a fair, unless made by a defined scale, and that scale should be reduced to its lowest terms; in our choice, one-eighth or one-tenth of an inch would be preferred, and no man is competent to make a model, either for utility or fancy, suitable for an exhibition, who cannot determine and delineate his views in their rotundity on a small scale. By enforcing this rule the best nautical mechanics would find a market for their genius, and would be induced to furnish their quota to the exhibition, provided the prize were worthy of their attention, which has never yet been the case. The advantages of having the models all upon the same scale is apparent; the comparative size of the models would furnish an index to the size of the vessel, and would also furnish the best exposition that would be required by competent judges.

We were somewhat surprised to find that the model of the brig *Lawrence*, made by Mr. Sourhough, of the firm of J. Brown & Co., of Baltimore, was on exhibition under the Merchants' Exchange, instead of the hall of the Institute. Notwithstanding its secluded position, the lover of genius and the student of nau-

tical art would walk further, and pay more, to see this model than the whole collection of the Navy Department. We have not the room for a detailed description of this model, built after the manner of building vessels in framing, ceiling, and planking. A brief history of the vessel must suffice. She was built in Baltimore by contract for the Government, and proved herself to be a fine vessel, worthy of her projectors. The peculiarities of her model were such as to curtail the accommodations in some particulars. After a short term of service she was condemned as rotten, and sold; was bought by a firm in Boston, and, after proper examination, was insured for A 1, and done efficient service for her owners.

We have thus concluded the duty assigned us of reporting, not only on the nautical department of the Exhibition, but have perhaps gone beyond our province in noticing what was not (but should have been) a part of the collection of models; and while we congratulate the members of the Maryland Institute on the flourishing condition of an institution worthy of their patronage, we commend the maritime interests of Baltimore to their special attention, knowing that her nautical mechanics are of a high order, and would not (if their interests were duly considered in the committee-room) be behind other interests in developing the resources of the State. In conclusion, we say, that as a nautical mechanic, and as a member of the Institute—having an abiding interest in its prosperity—we most solemnly protest against calling in the right arm of national defence to sustain her reputation as an ally to the country's maritime interests, without which it would not have been known from the State's own contributions.

EDS.

TONNAGE.—NO. II.

WE have said that in all cases the weight of the vessel should be deducted from the total displacement, and why? Simply, because the vessel and cargo are distinct each in themselves. The line of flotation, by which the weight of the vessel is de-

termined, forms the margin for cargo, above which, computation for capacity or weight finds its appropriate place, and should be regarded as distinctly separate from the total displacement—as the inmates of a house are from the house itself. This is true of displacement or capacity by weight, but not the less so when applied to capacity by bulk. The external bulk of a ship is not her capacity, and yet she has an absolute and determined bulk with reference to the elements of both air and water, and from this external bulk the internal cavity or capacity must be deducted; the thickness of the vessel's sides, bottom, and decks, furnish the bulk due to the hull, which may be shown, in cubic feet of capacity, to be deducted from the sum total of bulk. Thus we discover that there is in reality no difference whether the capacity of a vessel be determined by weight or bulk, provided the exponents be commensurate; but how shall this compromise be made, is a question of some import. The exponent by displacement or weight is equal to 35, because 35 cubic feet are equal to one ton, or very nearly so; and this may be objected to, because the cargo of light goods would fill the vessel, although weighing, perhaps, much less than the displacement by weight would indicate. This has been urged as an objection by almost every one who seemed to understand the subject of diversity in the density of cargoes. On the one hand, the vessel is loaded when but half full; on the other, the vessel is full when but half loaded. Hence we discover that the advocates of weight have no greater diffiulties to contend with than those of capacity. But we are told by those who plead for a rule of capacity for the measurement of vessels, that there can, by no possibility, be an invariable load-line of flotation, and, as a consequence, the same amount of infraction would be encouraged that now dishonors civilized life; vessels would always be loaded below their registered line of flotation. We are frank to admit, that with a defined line of flotation there would be room for infraction, and would inquire if the proposed rules of capacity are not equally open to infraction? We think they are. First, we say that there ever will be efforts to relieve some parts of the vessel from measurement, by some new plan or device, and not unfrequently will

one-third of the vessel escape registry; cabins become capacious, the galley becomes expanded, state-rooms are too contracted, the forecastle is too small—until, finally, a whole deck is turned to account for passengers, which, when in port, is so managed that it escapes the restrictions of the law. But this is not the worst feature in the provisions of a law of measurement by capacity. There is a ruinous tendency to encourage disproportion in principal dimensions; the same difficulty which now exists in relation to depth will still be encouraged, which, at the present time, is so destructive to human life, but which, notwithstanding, meets with favor, on account of the deep-rooted prejudices based upon ignorance of the great laws of flotation. The most prominent feature in the desire we have in reference to a change of the present law; finds a basis in the tendency to adopt proportionate principal dimensions; and why should the owner do so under a change of law? Because he would at once discover that there was, by necessity, to be but one loser, and, inasmuch as the government could not be defrauded, he would take care that he would not be; and the Americans would have safe vessels, as far as proportions were involved. We can discover no manner of escaping fraud while internal capacity is the arbiter of tonnage, we care not what may be the exponent.

We will now show what would be the results of capacity by weight or displacement. Let the ship-owner have as many decks as he pleased, the index will show their equivalent in the displacement. So also with whatever goes on board; its weight is accurately shown, or, if the term would be preferred, the number of cubic feet of water displaced is correctly shown on a scale of displacement; and it does not follow, as has been supposed, that because the number of cubic feet of water displaced is the basis either of tonnage for the cargo, or of tonnage for the vessel, that the exponent must, of necessity, be 35, or as it now is, 95. The question at issue now has no reference to exponents, but bears directly on the probabilities of fraud under the two kinds of measurement. Assuming that in both cases cubic feet is to be the standard, in the case of capacity internal, the whole ship cannot be measured, because of its ex-

posed condition when in port, not being properly covered by decks. Hence it is not accounted a suitable place for either cargo or passengers, and must not be measured. With such a law an inducement is held out to increase the depth of vessels and to hamper the top-sides with high bulwarks and parts of decks, to be completed by movable hatches and tarpaulins when cleared from the Custom-house. No man but the nautical mechanic can detail the various inducements and chances to evade a law based on internal capacity as a registry for tonnage. A few beams are run across the deck, at the height of the rail; this is assumed to be necessary for the stowage of boats, light spars, &c. The capacity of this frame-work cannot be measured, because it has no covering. A few state-rooms, forecastle, and water-closet may be all that is decked, and yet this entire deck frame, within a single hour, may be entirely decked and ready for the reception of several hundred steerage passengers. This, however, is but one of the many means adopted to evade the registry of the proper amount of tonnage. These are no phantoms of our imagination—they are existing facts, only, however, partially set forth. It has been urged that passengers should be chargeable with a higher tariff than an equal bulk of freight, inasmuch as they require more security and room, and because no estimate could be set upon their value or the worth of human life; we are by no means indifferent to the suggestion, and it is because we set an incalculable value upon human life that we advocate a wholesome law for the measurement of vessels, which cannot be evaded so as to jeopardize the lives of the confiding inhabitants of this life-instinctive dwelling. In the construction of a law that shall leave commerce untrammelled, due reference must be had to all; every interest must be regarded; not only the government, the merchant, and builder, but the unfortunate sea-sick passenger, as well as the operatives of this floating dwelling. In determining the number of cubic feet of water displaced, all interests are considered, and even though all the decks should be uncovered, or if she had no decks to define the depth, still the law would prove efficient; and we thus discover that the merchant and the builder are left free from every influence calculated to disturb the judg-

ment in the wisdom of its conceptions. Thus, at a glance, the nautical man will discover that when dimensions are set aside, and the question at issue ceases to be length, breadth, and depth for tonnage, it will not be difficult to secure the legitimate fruits of experience, and acquire a momentum in science to which the world is as yet a stranger. But it has been said, that provisions may be contained in a law that will provide against such contingencies. It may be possible; but in seeking to accomplish it, the law itself would be a cumbrous mass of preventives, and inefficient as an incentive to improvement. In addition to this, it leaves the ship-owner under the same influence that he now is, subject to the fostering influeuce of prejudices that have been the bane of progress for so many years. On the other hand, let all restrictions be thrown off, or, in other words, let there be no recognition of principal dimensions, but the ship be registered to her utmost displacement, after deducting the amount due to her own weight, and, like the scale-beam stamped with its utmost tension at the same time, leaving the purchaser to use it for as much less as he may see fit—so with the ship; although her total displacement may be set down in cubic feet, it does not follow that she will ever be loaded even to an approximation of the registered amount; nor will it be of the least consequence, while the merchant pays dues only on what he actually has on board, the exponent being fitted or adapted to his cargo. It has been said that a rule should work well both ways, and indeed this is a proverbial expression, and is applicable to the case in question. The merchant is now satisfied that his vessel should carry more than her registry; and in the assumed case before us, he would be quite as well satisfied that she should carry less, when he discovers that the registry of tonnage furnishes no index to the carrying properties of vessels; nor would it furnish the exponent of carrying capacity or burden in the proposed law, and we say, that unless the law is so completely divorced from all influence upon the dimensions of vessels, any system of improvement must be powerless, and human life insecure.

(*To be continued.*)

LIPSCOMBE'S IMPROVEMENTS IN MODELLING SHIPS.

WONDERFUL DISCOVERIES OF A WATER FILTER MANUFACTURER OF LONDON, PATENTED.

Among the changes that the world of mankind are ever seeking, in the form of ships, as well as all things else, the prolific springs of fancy have never ceased to supply a redundancy of projectile thought to drive the shaft of experiment. The young and the aged, without distinction of sex or condition, have indiscriminately laid their hands on the secrets of ocean locomotion, intent, by beneficent manipulation, to remove the dangers of the deep. Almost every instrumentality known to nature or art has contributed to increase the sum of knowledge which uneasy theorists have thrust upon nautical men; and there is yet another, which its inventor is sanguine will enlighten the world of ship-builders in the formation of "all new ships." "Being," as he states, "simply an hydraulist," "without experience in nautical matters," through the marvellous medium of a "water filter" for a *parabolic mirror*, he has been enabled "to discover," and to exhibit, "the defective formation of existing ships," and "explain the principle of the *new* form, wherein are centred *all the eminent qualities a perfect ship should possess.*" All this has been done, as saith his circular, by Mr. Frederick Lipscombe, water filter manufacturer, Temple Bar, London, who, being in addition thereto, "*distrustful* of his own judgment," would, in consequence, "therefore feel extremely obliged if nautical gentlemen will be so kind as to express to the patentee their opinion relative to the soundness or unsoundness of his views."

It is not for this purpose, however, that we shall present his "filtering" logic and illustrations to the eye of American architects. The world is too full of those who swallow the nostrums of "patent" science, *par excellence;* of others, who think there is no science at all in ship-building or navigation, and readily believe that one form of vessel is quite as good as another; and others, again, who regard the production of a perfect ship, in the practicable acceptation of the term, as a circumstance of *chance.*

that, after all, the ship having a *short bow* and *narrow beam*, may have the greatest speed and stability! Such are the absurd speculations and contradictions of one whose crude ideas concerning ships may well represent those of half the world.

Upon the "comparative merits of deep and shallow ships, formed upon the common wedge principle," we quote his remarks in full, and leave them to the advocates of either extreme for their consideration.

"The deeper and more compact a ship of any given tonnage, the less buoyant she is, and the less her stability; the greater her *up-and-down* motion in a rough sea, consequently the greater the mileage she will have to run; the greater is the striking force of waves against her; the greater is the natural water pressure, and, consequently, the stronger and more costly, in proportion to tonnage, it is requisite to build her. The deeper the ship, the more she tends to be driven out of her course by side currents; the less good steering qualities it possesses; the less deck-room she has, and the greater the inconvenience and discomfort to passengers, officers and crew. The deeper the ship, the more unhealthy she is; the less room she has for the effective spread of canvas; the more likely she is to run aground; the greater her liability to leakage; and the more difficult to stop the leak—deep ships require to be ballasted to obtain stability, shallow ships do not." "Although deep ships have so many disadvantages, a shallow wide ship formed upon the common wedge-shaped principle has disadvantages which counterbalance all these: for instance, the resistance to the onward motion of such a ship would be lessened in proportion as her length exceeds her greatest breadth; so that if her breadth were great, she would lessen the resistance to her motion only to a very trifling extent; consequently, she would be a very slow sailer; moreover, in a side-wind the pressure against the sails would tend to drive her sideways to almost the same extent as to drive her forward; these disadvantages are entirely obviated in the *new incline plane* principle hereafter described."

Ship-builders and men of nautical experience will require no explanation at our hands to appreciate the utter worthlessness of the proposed improvement, as shown in figures 11 and 13

FIG. 11.

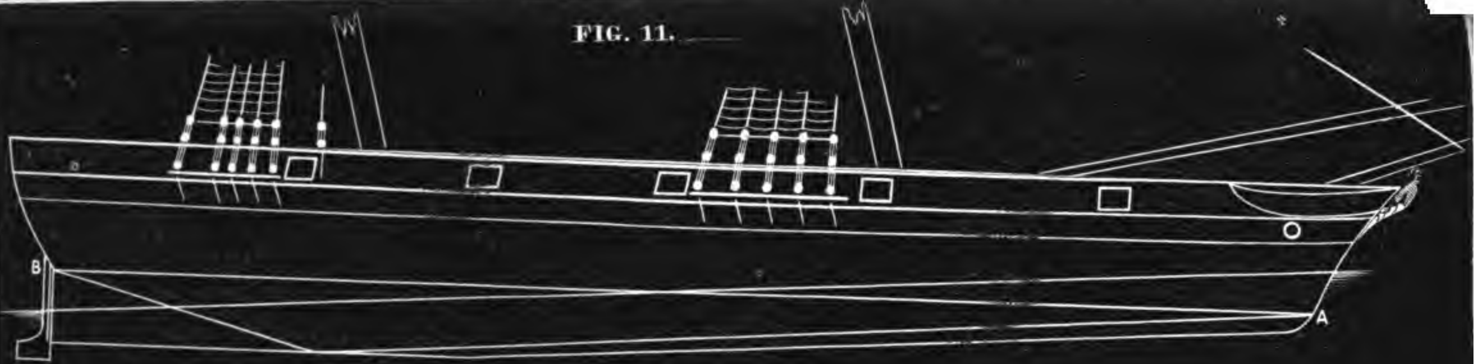


FIG. 13.

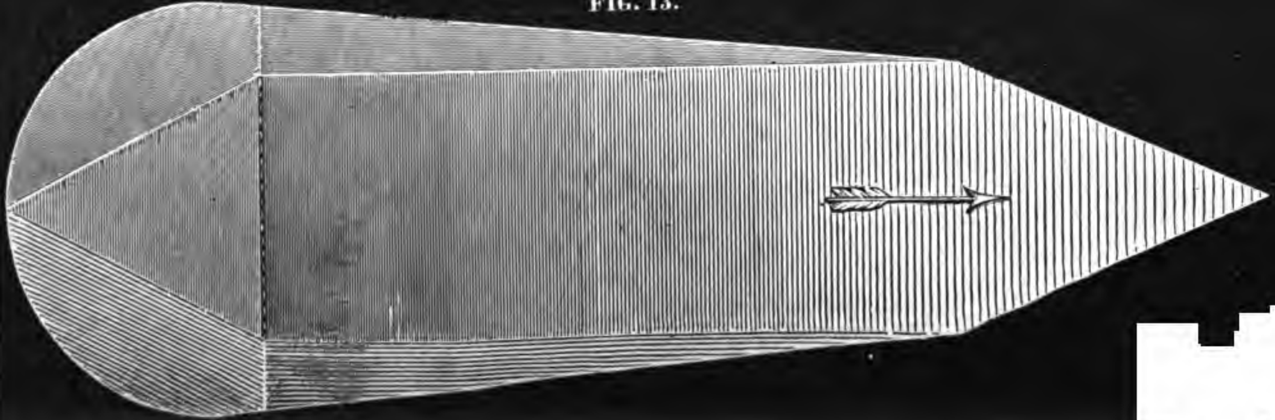


FIG. 11.

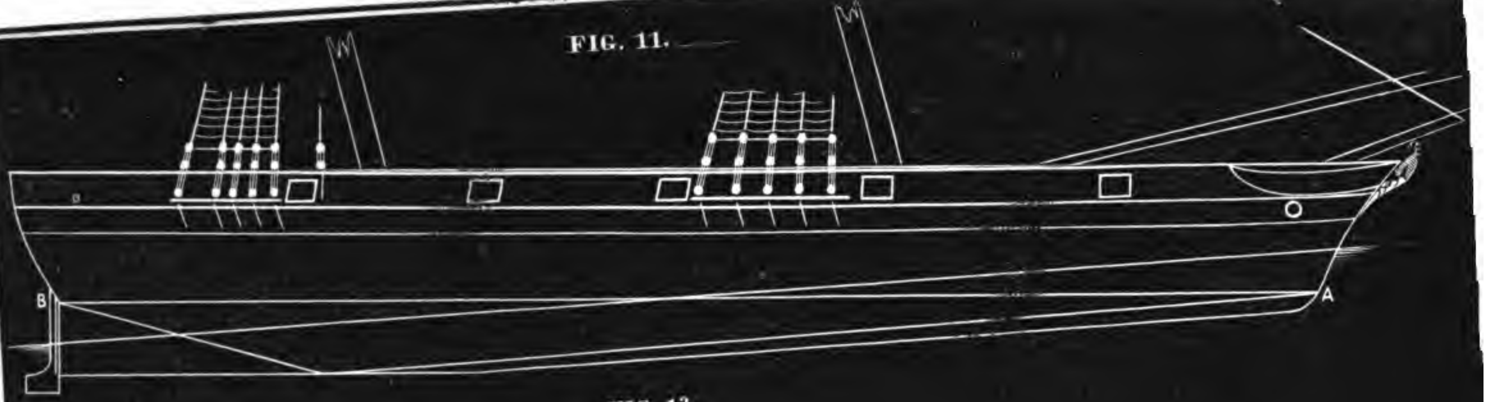
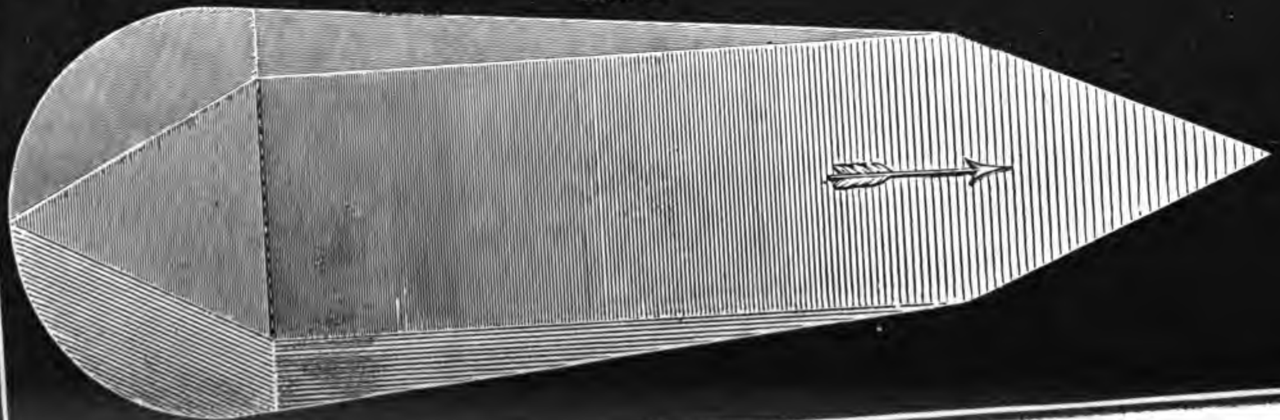
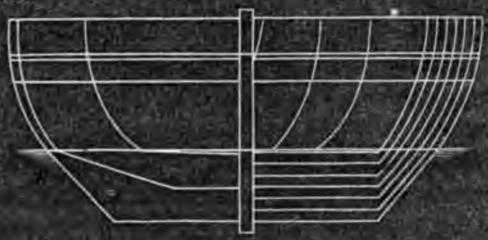


FIG. 13.



m the circular of this British Patentee; and in addition, we ll draw the body-plan to complete the entertainment, (Fig. 14.)

FIG. 14.



To quote our inventor, who, we may remark, has not pre- ited a single *new* idea to the modelling fraternity, but at most ly a jumble of other men's ideas and fancies: "Figures 11, and 14 are views of an imaginary *swift ship*, capable of at- ning a very great speed—a speed far higher than the *America* any other vessel formed upon the long-bow principle can possi- r reach. The immersed portion of the hull is formed with *aight* lines, these meeting with less resistance than *curved* es, and being more easily and *cheaply* constructed, the sides the hull are inclined inwards, allowing side-waves to have an *sy passage* underneath." In case these straight lines "appear sightly," it is advised that "curved lines can be employed th but little detriment." "The rudder is capable of shifting or down. A ship of the *new form* would *steer* most admi- bly, in consequence of the centre of longitudinal gravity being ought camparatively near her rudder, and also in consequence the shallowness of her forward part offering but little resist- ce to a side movement." Such are a few of the claims for a tent right calculated to monopolize the modelling of the *safest*, *ongest, swiftest, most stable* and *buoyant* ships, more especially

designed "for passengers and light goods;" ships that would be provided with great capacity for canvas, yet owing to "the *fineness* of their lines," "under less necessity than ordinary ships to carry sail, which would create too much lee-way."

We regard such propositions to introduce *scows* upon the ocean, as the most extravagant notion of the age, and if our Temple Bar Hydraulist will visit some of the interior waters of the United States, he could find ample opportunity to ground his convictions of science on the substantial basis of practical operations, and here might learn the very first lessons in scow-building, the primary school of marine architecture taught by rude boatmen.

A nautical mechanic will at once perceive the impracticability of constructing a vessel of the proposed description, which should maintain the line of flotation as it was set down by Mr. Lipscombe, shown by the line A B, in the original drawing. We have seated his patent *scow* upon a draught, which would be found closely approximating the true one, if such a vessel were built. It is manifest in such event, that all his calculations would be frustrated, and the whole design for *extraordinary* speed and *fine* sea qualities utterly spoiled. Nor would it be less amusing than instructive to witness the operations of the inventor's ship-yard, which, as we learn, was actually founded near London, for the construction of a *beautiful experimental yacht* of fifty tons. New theorems in the science of planking were there to be demonstrated, and it would be interesting to know how he turned the corners with his fore-and-after woods, whether by the instrumentality of the steam-box or the cross-cut saw? We are not in possession of information concerning the result of this experiment, but feel confident that our hydraulic modeller has learned ere this, that "of all mechanical contrivances, the art of shaping ships" is not the most *profitable* field, yielding fat pasture, to those who have deplored it as being "least understood," and ventured beyond the sphere of manufacturing *water filters* to wipe out the wake of the *America* or the *Marco Polo.*

THE SHIP TUDOR.

WHATEVER may be said of the era of clipper-ships, it will doubtless be conceded, that it has had the effect of exploding many of those theories and chimerical notions or traditionary rules of thumb, which have from time immemorial had a withering influence upon improvements in ship-building, and like the laws for the measurement of vessels, have chilled the pulsation of progress with its cold degrees. A revolution in the theory and practice of building ships has been steadily progressing for the last ten years on the Atlantic sea-board, during which time, many of the most prominent advocates of the principle and practice, which announces a ship to be a floating warehouse, have either been laid aside with the musty folios of fogyism, or the students have been content to quietly follow the leading spirit of progress in constructive science. Nothing has occurred within the wide range of commercial pursuits during the last century, that has had an equal amount of influence upon the monstrosities in nautical science, that the brief era of clipper-ships has exhibited. The merchant, who for perhaps twenty years had adhered with the most stringent tenacity to the dogma, which teaches that breadth, under all circumstances, was hurtful, could be found conforming to the law of expediency, and in his eager haste to rival his neighbor in a sufficiency of bottom and spars, gave breadth to his vessel without stint, unmindful that while he was improving his vessel, he was equalizing her real and apparent tonnage, until at length he has found the basis upon which the existing tonnage laws were enacted, viz., one-half the breadth of beam to be regarded as proper for the depth of hold. A revolution in ship-building has been consequent upon rivalry in the California and China trade. But in this land of boasted freedom, men sometimes exercise the largest liberty, and those pursuits which have been regarded as both honorable and lucrative, have been either overrun, or carried to an extreme which renders them both hazardous and unprofitable. This has been emphatically true of the clipper era in ship-building. It must not, however, be assumed, that our remarks would imply too great an enlargement either in the cost

or size of clipper-ships, as the cause of declension in the number built; other causes which are of sufficient importance to secure a separate article either in this or a subsequent number, have given rise to the change. The vessel forming the caption of this article was built after the tide of favor for clipper-ships had ceased to flow as rapidly as formerly, and a reaction had taken place in the minds of merchants consequent upon the expensive repairs they required and the damage they received, and this damage, we may add, was not confined to the vessel only; the cargo bore too often unmistakable evidence of a leaky ship. With a full knowledge of these facts, the *Tudor* was modelled by the senior editor, to be built at Quebec, L. C., by Mr. H. N. Jones, a ship-builder well known on both sides of the Atlantic, and to be built upon his own account; hence the reader will readily infer, that it would be no difficult matter to trace any blame consequent upon a blunder, or the result of a defect developed in the theory or practice of her construction to its proper source, inasmuch as there were but two parties involved. It may be said, however, that it seldom occurs that more than two parties are known in the construction of a vessel—the owner and builder; in reply, we may say that it rarely occurs, that the ship-owner is silent in relation to the principal dimensions of the vessel he is about to have built, more particularly when he himself is a ship-builder, as was the case with the *Tudor.** This vessel is not what may be regarded a clipper-ship, as her displacement, calculations, and cargo will readily show; and yet her performance on her first voyage will entitle her to a place among the most reputed, when the circumstances are considered. In relation to the place of construction, it may be well to say that the Lloyds have very wisely appointed surveyors to examine the *quality* of materials used in the construction of vessels, as well as the manner of building

* Mr. Jones was content with the determination of the tonnage of his vessel, without even a suggestion as to the best principal dimensions—the first instance of the kind we ever knew in the construction of a sailing ship; and the result shows the wisdom of his course, inasmuch as no man can select the most suitable dimensions in connection with a given amount of tonnage, unless he first make a series of calculations in reference thereto.—ED.

in the provinces, which, in connection with a general description of her build, will settle the question as to her ability to carry safely, as well as speedily, and consequently profitably.

PRINCIPAL DIMENSIONS OF THE TUDOR.

	Feet.
Length on deck from rabbet forward to post	231
Moulded breadth	39
Depth from base-line to planksheer	24

STATION OF MASTS.

She was masted by the rule in "Treatise on Ship-building," page 406.

	Feet.
Fore-mast, from rabbet on deck	46
Main-mast, between centres	80
Mizen-mast, " " 63 feet, and 42 feet from post.	

	Tons.
Registered tonnage, old measurement	1,847
" " new "	1,648
Total displacement when ready for sea	2,960
Exponent of total displacement	.65
Exponent of hull	.135
Draught of water forward	22 feet.
" " aft	22 " 5 in.
Weight of cargo	1,707 tons.

In giving a general description of the ship *Tudor*, it may be well to remark, that she was built under the supervision of the Lloyds' survey, and in conformity with their rules. Her frame was of oak and hackmatack raised from a platform, and diagonally braced with iron plates fore-and-aft; her clamps, ceiling, and thick strakes were of Georgia pine, keyed, and scarphed according to rule; the usual dowelling of beams and clamps was strictly attended to, the clamps running upon and across the wing transom; she has bilge and sister kelsons, bolted to the timbers before planking, and all fastened with copper according to rule; she has a garboard strake of 13 inches thickness, put on with a 5½ inch rabbet on the keel, the remainder forming a substitute for the box in the seats of the floors, so that while she has ten degrees of rise to her greatest transverse section, she has no chocks on her floors; the five following strakes were graduated from the thickness of the garboard to six inches at the bottom plank; her two decks were framed and knee'd in the most substantial

manner; nearly all the beams were dowelled into the clamps; she has a long poop-deck, and a house between that and forecastle, taking in both hatchways. In finish, outfit, and general appearance, she does no discredit to her builder, and when it is considered that her carrying properties, exhibiting, as they do, an exponent of displacement rarely equalled in our fullest packet ships, her performance furnishes ample grounds for assuming that the theory and practice of American ship-builders as set forth in their *works*, is at least commensurate with that of other nations, the most commercial not excepted. With regard to the performances of this vessel, Captain Pearson writes, that he had baffling winds, yet on 22 feet draught of water, with timber cargo and heavy deck load, poop and house on deck, both filled up with deals, she made Cape Clear from Cape Ray in 10½ days, and was docked in the Huskisson dock, Liverpool, on the nineteenth day from Quebec, leaving ships that sailed before her far behind, and arriving eight days before one vessel that sailed with her.

CARGO OF SHIP TUDOR, FROM QUEBEC TO LIVERPOOL.

	Cubic Feet.
46 Pieces oak	3,747
1,339 " pine	68,367
1,476 " tamarac	4,592
5,024 Pine deals.	
16,580 Puncheon staves.	
6,913 Pipe "	
219 Hhd. "	
23 Pine masts, =2,600 cubic feet.	
432 Hickory hand-spikes.	
80 Tons of ballast.	

Of this cargo, 8,950 cubic feet was on deck.

For the Nautical Magazine.

FOUL AIR IN A STEAMBOAT'S HOLD.

Gentlemen:—I take the liberty of sending you some account of a very remarkable experience which I have just had in the physiologcal effects of foul air,—such as may be, and in the case I shall cite was, engendered in the fore-peak of a steamboat on these Lakes.

Early in September, 1854, the steamer "LADY ELGIN" struck a rock in the lake seven miles south of this place when sounding for the harbor in a dense fog, and stove off a portion of her bilge-planks. Just then the wind cleared away the fog, and the pier was seen, which she was barely able to reach before sinking. Being called upon to furnish assistance to pump and raise, and if possible to find and stop the leak, pumps were rigged and manned, and I proceeded, with the help of two or three good men, to examine the hold as fast as the water would permit. For this purpose we entered the forecastle, where the deck hands had bunked, and removing a bulkhead which separated it from the fore-peak, we cleared away the rubbish, ceiling, &c., to examine the condition of the outside planking. This place had been used to stow away paint-pots and spare dunnage, and was dirty and filthy. We had already taken the precaution to bore several large auger-holes through the deck above; and on leaving our lamp at the forecastle stairs to visit other parts of the vessel, we observed that the flame burned very feebly, and, on repeating our visits to this confined angle in the bow, was not long in perceiving that an oppressive, heavy feeling accompanied our exertions in the explorations we were pushing on every side. These feelings, it was subsequently discovered, were common to our assistants. We had entered upon our labors early in the evening, and, after having intermitted our work in other quarters, often returned to this place, where it was expected the leak would most likely be found. My "hands" at last began to speak of a peculiar, curious feeling, running from the extremities upward; and not thinking anything dangerous could grow in the hull of an old vessel, of which I have handled so many in a life-long experience among their decaying timbers, I felt quite sure that, whatever might be one's sensations, all would be right upon coming on deck into the air. So thought one of my "hands," who made his way up very quietly, and, as I afterwards discovered, left for his house. On coming to the air, he was immediately taken with a most violent diarrhœa, and it was with great difficulty he reached home, distant half a mile, and was confined there for several days, purging and vomiting, as if attacked with cholera. He was a man of

powerful constitution. Not long after, another hand was missing, and next day I heard that he, too, had quietly taken himself off to *fresher* quarters, when, feeling "*curiously stirred* up," and "somewhat *mixed*," as he said, diarrhœa set in, and he left for home. A third man followed these two in a short time, and I was left alone. This was in the course of the night. Near morning, after having spent the night in a fruitless search for the broken plank, I made up my mind that if internal sensations were any index of approaching illness, it was time for me, too, to be leaving the boat, so I went on deck, and thence home. I was very ill, indeed, in bed all next day, and did not soon recover—not being able to render any further assistance towards raising the boat, this was done by others. We have all recovered, except one hand, who still experiences the effects of this night's work on his bowels, and will hereafter be rather shy of the filthy fore-peaks of old vessels. In the case under consideration, I suppose the water-logging aggravated the generation of the noxious gas, for which no means of escape were ever provided for in the construction of the vessel, otherwise this fore-peak had long been a wholesale innoculator of disease and death. In all my experience of life, I have never before witnessed such a sure and speedy infusion of poisonous vapor into the system, and have no doubt that there are many men who would have fallen victims to this one night's operations in the unventilated bow of a steamboat, if their lot had been directed to this quarter.

Very respectfully, yours,

S. B.

MANITOWOC, WIS., *Sept.*, 1854.

SCHOONER JAMES MILLER.

THE Schooner James Miller, Captain Braddock, is the name of a new three-masted fore-and-aft schooner, built in Essex, Conn., by NEHEMIAH HAYDEN, Esq., who has kindly furnished us with a copy of her draughts and tables, with a list of scantling and spars. This vessel, now on her first voyage, was built, *by the day*, for LANE & WEST, and others, of this city, and cost

$27,000. She was built for the Southern coasting trade, to which she seems admirably adapted, and, being constructed in the most thorough and workmanlike manner, and well found, may be expected to render a satisfactory account in her future performances. This schooner is of the largest class, measuring, by government rule, 491 tons. In the style of her finish and deck arrangements, she presents the features of sea-going craft of more dignified rig; but, in the dimensions and model, the expanded proportions of the once modest fore-and-after loom up to the observer in beautiful outline, and in striking contrast to the ships that, twenty years ago, registered the same tonnage. It has come down to the last five years—and may we not, with equal propriety, add, the last five months—to prove that the schooner rig, under its various modifications, has found no limit for its adaptation to vessels under 800 tons—a tonnage once deemed at the maximum of prudence in nautical construction.

The *James Miller* is of the following dimensions:—

	Feet.
Length on the load-line of construction	124.58
Length on deck for tonnage	130.
Breadth moulded	30.
Breadth extreme	30.66
Hold for tonnage	13.

Registered tonnage, 491 tons.

The frame is of oak and chestnut, and is moulded 13 inches at keel, 10 inches at the floor-heads, and diminished to 6 inches at the gunwale. The wales are of white-oak, 4 inches thick, diminished to the thickness of the bottom plank, which is 3 inches, and of yellow-pine midships, and white-oak at the ends, copper-fastened, and square-fastened throughout. The clamps are in three strakes, 4 inches thick, and 12 inches wide. Ceiling at the bilge, 5 inches; flat of floor, 3 inches thick. The garboard-strake is 12 inches wide and 5½ inches thick, bolted through the keel, and the limbers are grooved out of the inner surface, leaving an ample water-course to the pumps without cutting timbers; thus an inch of the moulding size of floors is saved, equal to one-twelfth of the strength. Keel is sided 13, and moulded 15 inches, with a 5-inch shoe. Main kelson is 14 by 14 inches square, floor-head kelson 10 by 10

inches, and a stringer over second futtock-head 8 by 9 inches. The deck-beams are sided 12 inches, and moulded 9½ at the centre, diminishing to 8 inches at the ends. They are spaced 5 feet 8 inches from centre to centre. Deck-plank, 3 inches thick.

The deck frame is double knee'd, with hanging knees under all the beams. Water-way is sided 10 inches and moulded 15, finished as in plate 8. Planksheer and rails are 5 inches thick. The main-rail is worked fore and aft on the outside of the stanchions 10 inches below their heads, upon which a monkey-rail completes the finish. Abreast the chains, a rack-rail is worked, and bolted into the main-rail. The quarter-deck, at the height of the main-rail, comes forward to the mizen-mast, and extends aft to within 4 feet of the aft edge of stern-post, where it drops 18 inches, and forms a steering-deck, to the stern. The tiller plays under this deck, and is worked by a wheel, close to the house above. This is an excellent arrangement, giving ample room for handling the spanker-sheet, protected from the dangers of a high deck. The trunk for cabin is 22 feet long, and 18 feet wide in the middle of length. Main companion-way is midships, and forward; a small one also on the larboard side, aft. The main cabin is 16½ feet long by 8 feet wide, with the captain's room, two state-rooms, and a closet, on the starboard side; and the mate's room, one state-room, pantry and closet, and gangway, on the larboard side. The steerage is under the quarter-deck, between the cabin and mizen-mast, 11 feet long, for the stowage of light goods. The main-hatch is 7 by 8 feet, immediately forward of the mizen-mast. House for galley on deck, 12 by 14 feet. The hatch is close forward of the main-mast, 8 feet long and 12 feet wide. House on deck for seamen abaft the foremast, 12 by 14 feet, with doors opening on each side.

The centre of windlass is 10½ feet abaft the rabbet on deek, and without "ends," is in consequence, located close forward; it is worked by patent purchase on the forecastle deck, at the height of main-rail, extending aft, across the bow at the bitts. We regard this general arrangement an excellent one, inasmuch as it greatly conduces to economy of deck room and neatness of finish. Since the sharpening out of the bow on well-modelled

vessels, the windlass has been necessarily crowded aft, to get room for working the ends, lengthening the bowsprit inboard, and distributing the working of ground-tackle, over too large a portion of the deck.

The light-line of flotation above base forward $= 4\frac{7}{12}$ feet; draught of water forward, 6 feet 3 inches. Light-line of flotation above base aft $=$ 5 feet; draught of water aft, 6 feet 6 inches. The dead flat frame is located 7 feet forward of the middle of load-line, in order, we suppose, to give the longest *run* to the aft body, and the greatest buoyancy to the fore body; nevertheless, the weight of the vessel equalizes the discrepancy by a deeper immersion of the aft body; so that the *run* of both bodies is nearly the same in length when the vessel is under sail, and the buoyancy is, by this trim, taken from the bow, and applied to the stern. If water-lines be drawn on the model parallel to the plane of flotation, they will show the lines of fore body to be sharper, and those of the aft body to be fuller, relatively, than the modeller intended; yet it is found, in sailing, that a slight trim by the stern is the best for speed with this description of model.

TABLE OF AFT BODY.

TIMBERING ROOM, 27 INCHES.

Frame.	1st W. L. ft. in.	2d W. L. ft. in.	3d W. L. ft. in.	4th W. L. ft. in.	5th W. L. ft. in.	6th W. L. ft. in.	7th W. L. ft. in.	8th W. L. ft. in.	9th W. L. ft. in.	Sheer height from 8th W. L ft. in.
Dead flat	10 11	13 3	14 4½	14 11	15 1½	15 1	14 11	14 8½	14 7	1 1
4	10 8½	13 1	14 3½	14 10½	15 1	14 —	14 10½	14 8	14 6	1 -
8	9 9	12 5	13 10	14 7½	14 11	14 10½	14 9½	14 6	14 4½	1 1
12	7 10	10 11½	12 9½	13 —	14 6½	14 8	14 7	14 4	14 2	1 2
16	5 4½	8 6	10 10½	12 7½	13 8½	14 2½	14 3½	14 1	13 10½	1 5
20	3 2	5 7½	7 11	10 1	12 —	13 2½	13 9	13 9	13 6	1 9½
24	1 9½	3 1½	4 8	6 6	8 8	10 11	12 6½	13 3	13 1	2 3
27	1 2	1 9½	2 7	3 8	5 2	7 4	10 4½	12 6	12 8½	2 8

Water-Lines above Base

ft. in.	ft. in.	ft. in.	ft. in.	ft. in.	ft. in.	ft. in.	ft. in.	ft. in.
1 -	2 3	3 9	4 6	6 6	8 6	10 6	12 6	13 6

Margin of Stern aft of Frame, 27 on the Water-Lines.

ft. in.	ft. in.	ft. in.	ft. in.	ft. in.	ft. in.	ft. in.	ft. in.
8 3½	8 5	8 7	8 9½	9 -	9 2½	9 5	9 7½

Margin of Stem forward of Frame U on the Water-Lines.

ft. in.	ft. in.	ft. in.	ft. in.	ft. in.	ft. in.	ft. in.	ft. in.	Sheer.	Rail.
5 4	7 2	7 10	8 7½	9 3½	10 1	10 10	11 8	14	18.6

TABLE OF FORE BODY.

TIMBERING ROOM, 27 IN.

Frame.	1st W. L. ft. in.	2d W. L. ft. in.	3d W. L. ft. in.	4th W. L. ft. in.	5th W. L. ft. in.	6th W. L. ft. in.	7th W. L. ft. in.	8th W. L. ft. in.	9th W. L. ft. in.	Sheer height above 8th W. L. ft. in.	Rail br'ds ft. in.
D	10 9	13 1½	14 3	14 10	15 ½	15 —	14 10½	14 8	14 6½	1 2	— —
H	9 9½	12 4	13 8	14 5	14 9	14 9	14 8½	14 7	14 4½	1 5½	14
M	7 10	10 5½	12 ½	13 1	13 9	14 ½	14 2	14 2½	14 1½	1 9	13 12
Q	5 1	7 4½	9 —	10 3½	11 4	12 1	12 7½	13 1	13 4½	2 3½	13 7
U	2 2	3 6½	4 8½	5 9¼	6 11	7 10½	8 10½	9 10½	11 2½	2 11	12 10

Rail height above sheer forward = four feet.

LIST OF SPARS.

Fore, main, and mizen masts are each 80 feet long, 24 inches diameter, and 9 feet head. Fore and mizen topmasts are 46 feet long, and 12 inches diameter. Main-topmast is 48 feet long, 12 inches diameter. Poles are each 5 feet long. Bowsprit out-board, 22 feet from extremity of knight-heads, 24 by 25 inches in the bed. Jib-boom out-board, 18 feet; flying jib-boom, 10 feet + 5 feet pole.

She cost $54 per ton when fitted ready for sea; and it may not be amiss to add, that her builder and master each own a share, and fully appreciate the truth that *good* vessels cost something, and are in consequence worth something, where the model and rig are not at fault.

ENGLISH CLASSIFICATION.

IT is perhaps not generally known that ships built at remote points from our larger commercial cities, seek English classification. Among others on the list, we see the new ship Gosport, built at Portsmouth, Va., reported at Quebec, bound to England to be classed. The Lloyds have found it absolutely necessary to increase the number of surveyors in the Province of Canada, the building of vessels having so rapidly increased, not only on the St. Lawrence River, but on the Lakes. Mr. Thomas Menzies, the surveyor at Quebec, has been furnished with an assistant in the person of Mr. C. R. Coker, and recently another has been sent. It is doubtless a wholesome restriction upon the vast quantities of refuse timber to be disposed of at the several cities on the St. Lawrence, and where so many shipments of timber and deals are made to Europe to prevent its being used in the construction of vessels.

MARINE ENGINES BUILDING IN THE IRON WORKS OF NEW-YORK,

NOVEMBER 1ST, 1854.

ALLAIRE WORKS.—One beam engine, 65 inch. cylinder, 10 feet stroke, for new steamer "Magnolia," 1,500 tons, for C. Vanderbilt.

One beam engine, 75 inch. cylinder, 11 feet stroke, for C. Vanderbilt's new steamer "Ariel," of 2,000 tons, on the stocks at Simonson's.

One beam engine, 76 inch. diameter and 12 feet stroke, for steamboat "Plymouth Rock," of Stonington line, just finished, and made first trip.

FARRON IRON WORKS.—One beam engine for steamboat "Gerard Stuyvesant," 32 inches diameter of cylinder, 9 feet stroke of piston. Boat 120 feet long, 33 feet wide, 10 feet depth of hold, for the Houston-street Ferry Company. Diameter of wheel 16 feet, face 7 feet, width of bucket 2 feet 6 inches, dips 20 inches. The wheel is what is termed a broken bucket, such as is used on ferry-boats.

FULTON IRON WORKS, foot of Cherry-street, E. R., N. Y.—Messrs. Pease & Murphy have just completed the steamship "Pelayo," 64 inch. cylinder. The steamboat "Metacomet," 36 inch. cylinder, and 10 feet stroke. Have under way, the steamship "Cuba," 56 inch. cylinder, 10 feet stroke, for

James L. Day, New-Orleans and Mobile route. The steamship "Prompt," for Messrs. Lowe & Co., Shanghai and China route, with a full set of duplicate machinery. Two very large low-pressure boilers for the steamer "C. Vanderbilt." Two low-pressure boilers for the steamer "State of Maine."

PHŒNIX FOUNDRY.—Cunningham & Belknap have finished within the month one low-pressure beam engine of 40 inch. diameter of cylinder and 10 feet stroke, with one iron boiler 10 feet in diameter, 25 feet long; 26 feet wheel, 7 feet 9 inches face, for steamboat "Eagle's Wing," of New-Bedford. Boat built by Samuel Sneeden.

Four tubular boilers for United States Steam Battery now building by R. L. Stevens, Engineer, at Hoboken, N. J.

NEPTUNE IRON WORKS.—Guion, Russell & Co. have in course of construction, and nearly completed, a 50 inch. 12 foot beam engine, with Stevens' cut-off and Guion's attachment, one boiler under deck, for the Messrs. Sanford's line of New-York and Philadelphia steamers. The vessel is 244 feet in length on deck, 33 feet breadth of beam, wheels 31 feet in diameter, 8 feet 6 inches face. Vessel built by Mr. John Englis.

They are also building a beam engine of 52 inches diameter of cylinder and 11 feet stroke of piston, for the Merchants' and Miners' Transportation Company of Baltimore. Stevens' cut-off and Guion's attachment, one boiler under deck. Iron wheels 29 feet diameter, 7 feet 4 inches face. Vessel, 210 feet extreme length, 33 feet beam, three decks, built by Mr. John Englis. She is the first of a new line of steamers to run between Boston and Baltimore, and will be completed about the middle of November.

They have also in the course of construction, for the Hartford and New-Haven Steamboat Company, a beam engine of 65 inches diameter of cylinder and 12 feet stroke of piston. Stevens' cut-off—two boilers on guards. Vessel building by Mr. Samuel Sneeden, Green Point.

NOVELTY IRON WORKS.—Stillman, Allen & Co. have nearly finished one beam engine, having a cylinder of 105 inches diameter and 12 feet stroke, with Allen & Wells' adjustable cut-off; iron water-wheels 40 feet in diameter.

Four tubular boilers, (brass tubes.) Two 13 feet 3 inches in

diameter, and 20 feet 6 inches long; and two 11 feet 3 inches in diameter, and also 20 feet 6 inches long.

The above for the Bay State Steamboat Company's steamer "Metropolis."

They have also in hand a pair of oscillating engines, having cylinders 65 inches in diameter and 10 feet stroke, provided with Allen's adjustable cut-off. Two flue boilers 26 feet 9 inches, and 29 feet in length and 14 feet in diameter each. Iron water-wheels about 30 feet in diameter. For a new steamer for the Havre line, to be finished by the month of April, 1855.

North River Iron Works.—Fletcher, Harrison & Co. are constructing, on their own account, one low-pressure beam engine, 30 inch. cylinder and 8 feet stroke. One cylindrical boiler 25 feet long and 6 feet in diameter.

REACTION PUMPS FOR SHIPS.

The recent calamitous catastrophe in the loss of the Arctic has awakened an inquiry into matters of the most vital importance, connected with the security of human life. When a leak is known or believed to exist in the immersed portion of a ship, the order to sound or man the pumps is given to the watch, and echoes through the ship; but the pumps, as a part of the vessel's outfit, are not unfrequently like a physician, when a member of the family is in pain—the first called on, and when in health, the last thought of. If it is of the least consequence to have pumps on ship-board to save the vessel from foundering, or to prevent the accumulation of bilge water, it is worthy of consideration that we secure such as shall prove most efficient; and in order to do this, we must look for those which shall not only be able to perform the most work with the least expense of power, but which at the same time requires the least repairs. Of all the contingencies which can possibly arise on board a leaky ship, none seems more completely to paralyze effort than a disability of the pumps. In conformity with the laws of nature, in reference to the motion of fluid bodies, we cannot but admit that a

revolving motion is best adapted to raising water, inasmuch as the particles of fluid are globular, and as a consequence are moved with greater facility by a rotating than by any other motion. The laws of fluid resistance will teach this ; hence it is no marvel that we find a reaction or a rotary pump doing more work, with a given amount of power, than any other yet offered to the public. The question now recurs to us—Why have they not been introduced on ship-board, and is the plan feasible with reference to economy, in room, cost, durability, &c. ? We have no hesitation in giving it as the result of our own judgment that Gwynne's patent reaction pump is the best yet offered for vessels, whether we regard them in reference to the discharge of water, the extinguishment of fire, or the security against derangement, or wear and tear, of all that has come under our own observation. Mr. Gwynne is competent to speak for himself, and in the succeeding number we will present an engraving of the pump, with data of its capabilities :—

NEW-YORK, *12th October*, 1854.

To Steamship and Steamboat Proprietors and Agents :

GENTLEMEN—Failing to obtain your attention to the peculiar capabilities of the " Gwynne Pumping Engine," by advertising and other business modes ; and in view of the great loss of life and property by the wreck of the San Francisco, the Humboldt, the City of Glasgow, the Franklin, and the Arctic, on board of which my apparatus would have been of essential service, and no doubt would have saved all the ships, except, perhaps, the Franklin—I take this method of laying before you a statement of what my apparatus can effect, and what I am prepared to do to insure its immediate adoption on all ocean steamships and steamboats carrying passengers.

One of moderate size and cost, say :

2½ feet wide, 4 feet long, weight 1 ton, cost $750, will pump 50 barrels per minute.
4 " 6 " " 3 " $1,500, " 200 " "
5 " 7 " " 7½ " $3,000, " 500 " "

They can be made of a capacity to throw 2,500 barrels per minute, and still be small in size, weight and cost.

As a fire engine, they would serve effectually to put out the most extensive fire that could occur on ship-board.

I am prepared to build any size that may be ordered, (the three sizes above mentioned are on hand,) place it on board a barge, have a fair trial made of it, and if it fails to perform as stipulated, I will forfeit and pay to any charitable institution the price agreed for the engine ; if it performs as agreed, the party ordering to receive and pay for it. I will give ample security to keep them in repair for twenty years, the owner paying me an

annual sum equal to 5 per cent. on its first cost. I will leave it optional to the proprietors of the ocean steamship first ordering two Pumping Engines of 500 barrels per minute capacity to pay for them or not after the Pumps are in operation on their ship. I am induced to make this offer for two reasons—a desire to save human life, and to realize a large profit from my invention. Those who know me intimately will understand which inducement weighs most with me.

That this apparatus is not of yesterday, will be apparent from the testimony in the pamphlet issued by me; and as evidence of my ability to perform what I undertake, I have permission to refer to

Peter Cooper, Esq., New-York.
Mark Healy, Esq., Boston.
James Horner, Esq., New-York.
John G. Stevens, Esq., Rest. Engineer Delaware and Raritan Canal,
Messrs. J. S. Bunce & Co., Mechanical Engineers,

and to other gentlemen, scientific and practical, whose names will be given on application to the subscriber, at Messrs. Gwynne & Co.'s Office, 13 Greenwich-street.

Respectfully, &c.,

J. Stuart Gwynne.

NEW LINK PROPOSED FOR CHAIN CABLES.

We have received the following letter and drawing from Wm. H. Webb, Esq., ship-builder, proposing a new form of stud to strengthen chain cables, by Mr. Watson, of New-Jersey. The value of the suggested improvement has not yet been tested.

MR. WEBB:

SIR—On the outside of this sheet you will find a drawing of a Chain Cable-Link, having in its centre a four-pointed Star, to give it greater strength, and also as a great National Ornament upon vessels of the United States. The common Stud used in links of cable chains is no doubt satisfactory, but it appears to me that the design which I send you is superior in point of strength to the common stud, as it supports the link in four places instead of two. The star, where it receives the pressure of the link, is half an inch square, which would appear to give it greater strength than the stud. As an ornament it might be used in the bowsprit chains, say 31 links in each chain, (or more,) each having the star, and an abbreviation of the name of each State stamped in the star: N. Y., N. J., Ct., Va., Mass., &c., &c. The link should be painted black, and the star white. Of course in making the stars of iron, their faces should be of the same shape as the stud, having both sides convex. If you think the design a good one, have one made out of iron, which would show it to a much better advantage, and also the strength might be determined.

Very respectfully,
Your ob't serv't,
A. WATSON,
Harmony, New-Jersey.

SIDE PROPELLERS.

THE *London Mechanics' Magazine* for April, 1854, gives an account of Wilding's Patent Submerged Propeller, of Chesterfield-street, London. The patent was issued Oct. 3, 1853. It is stated that this propeller has been successfully applied on the sides of a vessel, and may be unshipped at pleasure, and taken on board the vessel. In this propeller two blades are mounted on a shaft, which may be feathered by means of an elliptical chock, so that while one is acting, the other is moving through the water edgewise, with a resistance due to the friction only.

This invention partakes more of the nature of the side-wheel than of the screw, and, judging from the reported success of the experiments, furnishes additional testimony in favor of applying the propulsory power at the longitudinal rather than the transverse centre of the vessel.

Side Propellers have been used in France as early as 1848 by Messrs. Mazaline Frères, of Havre, on board the Empereur du Brésil, 600 tons packet-ship, between Havre and Rio Janeiro.

THE STEAMSHIP QUAKER CITY—RESULTS OF HER TRIAL TRIP.

This ship was built in Philadelphia; hull by Vaughan & Lynn, machinery by Merrick & Sons; owned by American Steamship Co.—service, Philadelphia and Charleston. The model very nearly approaches that originally furnished by the Senior Editor for the *Keystone State*, which was subsequently filled out on the bilge to accommodate the shape of the boilers. This defect is not shackled upon the *Quaker City*, and she is therefore adjudged to be superior to her consort.

DIMENSIONS.

Length for tonnage	230 ft.
" on deck	240 ft. 3 in.
" on load-line	225 ft. 4 in.
Breadth at dead flat frame	36 ft.
Depth of hold	21 "
Length of machinery, space	76 " 4 in.
Shaft forward of stern-post	91 "
Draft of water at load-line	12 "
Tonnage (Custom House)	1,421 "
Area of immersed section	390 sq
Contents of bunkers in tons of coal	270

Masts and rig—fore-topsail schooner.

The particulars of machinery, and results of trial trip, we find in the "Journal of the Franklin Institute," furnished by Mr. Merrick, and inasmuch as very satisfactory results have been shown from the performance of this vessel, we shall take the liberty of presenting our readers with an abridgment of the scientific article:—

Engines—One side lever.

Diameter of cylinder	85 inches.
Stroke of piston	8 feet.
Maximum of pressure of steam in pounds	27
Cut-off variable from ½ to ¾ of stroke.	
Maximum revolutions per minute	18

Boilers—Four return tubular, two forward and two aft the engine.

Length of boilers	14 ft.
Breadth "	10 " 4 in.
Height, exclusive of steam drum	11 " 1 "
" inclusive " "	21 " 3 "
Number of furnaces in all the boilers	16
Breadth of furnaces, each	2 "
Length " "	7 " 3 "
Number of tubes in all boilers	800
Internal diameter of tubes	2 inches.
Length of "	9 ft.

Grate surface	232 sq. ft.
Heating " total	7,820 " "
Diameter of smoke pipes (two)	5 " 3 in.
Height " above drum	35 ft.

Description of coal, anthracite; ditto of draft, natural.

Paddle Wheels—Ordinary radial.

Diameter over buckets	31 ft.
Length of "	10 "
Depth of "	1 " 8 in.
Dip of wheels at load-line	6 "

Remarks.—Hull braced with diagonal double laid iron straps 4½ × ⅝; floor, whole length filled in solid; frames moulded 16 ins., sided 15 ins., apart 30 ins., increasing at ends to 31, 32, and 33 inches. Has Pirsson's Equilibrium Condenser.

The trial trip of this ship took place in the Delaware River and at sea, on the 6th and 7th of September. The coal used was Lehigh, no soft anthracite being procurable.

Conditions of the Ship on the Trial.

Draught of water forward	9 ft. 9 inches.
" " aft	11 " 6 "
" " mean	10 " 7½ "
Area of midship section immersed	340.5 sq. ft.
Displacement at that draught	1,474 tons.
Coal on board	205 "
Dip of wheel at that draught	5 ft. 1 inch.
Diameter of wheels outside of buckets	31 "
" " inside "	27 " 9 "
Effective diameter (of centre of pressure) at that draught and dip	29.56
Circumference at centre of pressure	92.86 ft.

Performance.—During the upward run the total number of revolutions was 4,216; average boiler pressure 21 pounds; vacuum per gauge, 23¾; mean number of revolutions per minute, 14.15; mean number of revolutions per mile, 62.87; distance run in statute miles, by coast survey, 77 miles; allowance being made of two miles per hour for the speed of current, which was favorable, reduces the distance to 67.05 miles; time of upward run, 4 hours and 58 minutes; mean velocity, 13½ miles per hour; greatest speed attained, 14 miles per hour.

The distance traversed by centre of pressure of wheel is 391,507 feet.

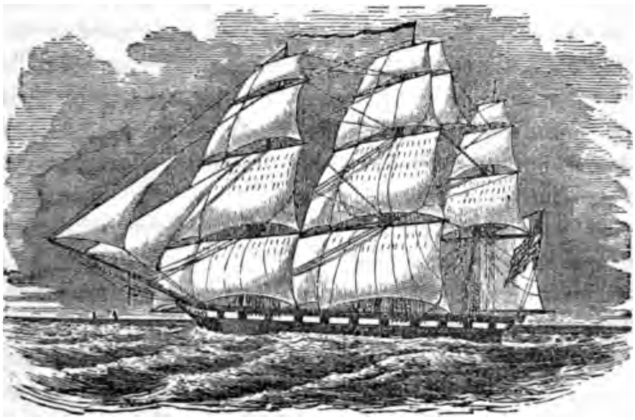
Distance run by ship through the water, as above, is 354,024 feet. The total slip in feet is then 37,483 feet, equal to 9.57 per cent.

Mr. Merrick remarks that "there being no doubt of the correctness of the above data, both as to the distance run and the revolutions made, which were carefully noted from the register, the small amount of *slip* must be attributed to the fineness of the model of the ship, and the large paddle surface immersed."

The gross power developed by the engine was 749.5 horse power, of (33,000,) of which 64½ per cent., or 483.77 horse power, was exerted in the propulsion of the ship.

We understand that Messrs. Pease & Murphy have secured the contract for furnishing the engines for the war steamer Niagara, now building at the Brooklyn Navy Yard.

Nautical Department.



LOSS OF THE ARCTIC.

As Journalists, it is our duty to give publicity to one of the most afflicting casualties in Ocean Steam Navigation that it has been the province of the pen to record, which has recently taken place on the banks of Newfoundland.

The loss of the Arctic, one of the Collins line of steamers, has sent a thrill of grief to every community over the wide embrace of this entire Continent, that will not soon be forgotten. The daily and weekly press have spoken in every city and in every town; and now that a season for reflection is afforded, it may be well to inquire into those causes upon which have hung such momentous results.

Without exception, this line of steamers has been regarded as the exponent of American skill in Ocean Steam Navigation, and was universally recognized as worthy of confidence in both hemispheres. No pains had been spared, either in the construction or arrangements, to render them at once superior to any vessel of their class, both in hull and machinery. Their commanders were both skilful and urbane, and had published rules for their guidance. In every particular, they were regarded as the exponents of comfort and safety, (as their passenger list

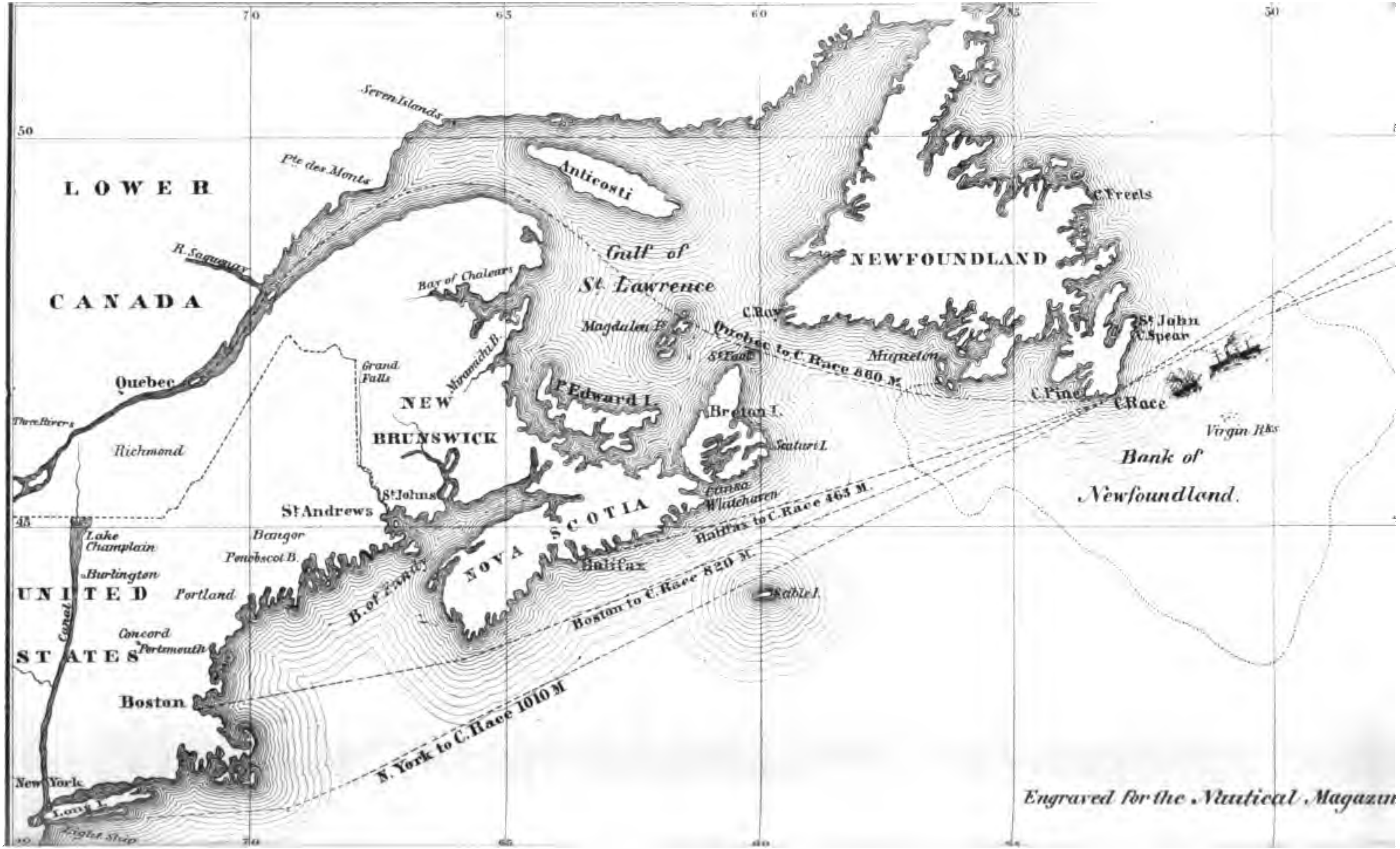
abundantly proved,) in all the requirements of a sea voyage. Who, then, was to blame? We say that the proprietors and managers were not at fault, inasmuch as they not only complied with all the requirements of the laws of their country, but of such other rules as their own wisdom could devise. The whole history of navigation is marked with disasters, and by their frequency of occurrence, of late, the public mind is led to suppose that some inattention on the part of the proprietors is the cause. We think, however, that it does not follow as a consequence—the same amount of care may be used and precautionary measures may have been adopted, and yet the list of disasters will most likely increase in the ratio of the increased number of vessels, the increased tonnage, or the number of voyages performed. The statistics will show that the loss of life consequent upon shipwreck is not half as great now as fifty, or even twenty-five years ago, in proportion to the number of passengers crossing the Atlantic; and yet, we are ever ready to charge the owners or officers with inattention. These same defects have always existed, but because never before so fully developed, have not been discovered. As a commercial people, we have been too intent on increasing the number of our ships, to pause and improve as we progressed. We find that our transatlantic neighbors have given more attention to this matter than we have, as may be seen by the construction of the Vesta, and yet we find the same defect in the Cunard line of steamers, in relation to the number of boats on board; and the Company wisely seek to remedy it, by ordering an increased number. As it regards the number of boats a vessel should carry, the Lloyds and the Tonnage Law have defined the matter, and Congress has ratified the same, or that which may be regarded as its equivalent. The Lloyds' rules require every vessel under 150 tons to be provided with one good boat, and every vessel of 150 tons and above to have a suitable number, and to be provided with *at least* two good boats. Again, the surveyors are directed to be particular in examining and reporting the condition of the boats of all vessels employed in carrying passengers. (We suppose it never occurred to the Committee of Management of this gigantic association, that possibly there might on some occasions

be an insufficiency of boats either in their number or size.) But Congress have done even more than the Lloyds for ameliorating the condition of shipwrecked passengers and the crew of vessels, in the recent act for the better security of human life on board of steam vessels; they have enacted a clause which requires that all vessels of 1,500 tons and upwards shall have six life-boats. Thus we discover that the tonnage law defines the size of the vessel, and when above or beyond 1,500 tons, the number of boats are not required to be increased by the act of Congress referred to. This question of tonnage properly belongs to a succession of articles upon the subject, and to which we refer the reader, and we will only pause to inquire what is the size, or tonnage ocean steamers are usually built? In answer, we say that very few are built of less tonnage than 1,500 tons; almost all our coasting steamers are about this size. Thus we find that a steamer of 5,000 tons would be required to carry no more than six life-boats by the law of Congress; and by the Lloyds' rules two good boats will answer the purpose of classification, if all is right in other respects. Would it not be more consistent with the laws of humanity (if there be such a code) to let the number of passengers, together with the officers and crew, determine the number of life-boats a vessel shall carry? We have long since come to this conclusion in reference to boats; and to another in reference to the vessel itself, viz., that the vessel itself should be a life-boat—more particularly such as carry passengers—and then, with other necessary precautions, a higher price would be set on human life. It was with a view to securing this great end that we projected and undertook the construction of a vessel of this description in 1853, but were foiled in our plans by the untimely passage of the vessel into other hands, consequent upon contingencies which it was neither our province nor purpose to control, a description of which will furnish a chapter in some future number of the Magazine. With regard to the Vesta, we would say that she was an iron vessel; as a consequence, it was no difficult matter to divide her into water-tight compartments by transverse bulk-heads; but the great secret in life-boat construction, whether it be the vessel itself or the boats, consists in giving strength to the vessel as well as security against

sinking, and this combination is better and more readily obtained by longitudinal than by transverse bulk-heads alone, particularly in wooden vessels. The testimony furnished by the several balance, sectional, or dry docks of this city, is quite sufficient to establish the fact that all vessels of any considerable size require additional longitudinal strength, be their principal dimensions what they may. With regard to the number of boats, we say that the number should be regulated by the number of passengers to be conveyed; and further, that they may, for convenience, be carried in nests, one within the other—three, and even four boats, may be thus carried in each collection. Let the public mind be turned aside from writing bitter things against the proprietors, managers, or the crew of the Arctic, and devote part of their energies, at least, to securing by act of Congress, first, a wholesome tonnage law; second, that all steam or other vessels carrying passengers, shall be built on the life-boat principle; and, third, that the number of boats shall be regulated by the number of souls on board; and last, if not least, that a good look-out shall be kept, and the steam whistle kept screaming its scalding notes during the time of fog and darkness—and then, and not until then, shall we realize security on the boisterous deep. During the last ten years we have urged the necessity of a change in the law for the measurement of vessels, and have wrote and spoke upon the subject with untiring zeal. The subject yet slumbers in the public mind, only because nautical, unlike other interests and pursuits, has never had a periodical in this country to set forth its true interests as developed by experience.

With regard to the casualty of the Arctic, we give the statement of Captain Luce, part of which was given in a letter to E. K. Collins. We also furnish a chart of the coast:—

The Arctic sailed from Liverpool on the 20th of September, at 11 A. M., with 233 passengers, also with 150 persons composing the officers and crew, in all 383 persons. Nothing of special interest occurred during the passage until the meridian of Wednesday the 27th. Eight bells had announced the hour of noon, and by observation the ship was in Lat. 46° 45' N. and Lon. 52° W., steering W. by compass, and on the banks of Newfoundland. The weather had been foggy during the day; generally, a distance of half to three-quarters of a mile could be seen, but at intervals of a few minutes a very dense fog, followed by being sufficiently clear to see one or two miles.



LOWER CANADA
Quebec
Three Rivers
R. Saguenay
Pte des Monts
Seven Islands
Anticosti
Gulf of St. Lawrence
Bay of Chaleurs
Miramichi B.
Grand Falls
NEW BRUNSWICK
St. Johns
St. Andrews
Richmond
Lake Champlain
Burlington
UNITED STATES
Canal
Concord
Portsmouth
Portland
Bangor
Penobscot B.
Boston
New York
Long I.
Light Ship
B. of Fundy
NOVA SCOTIA
Halifax
P. Edward I.
Magdalen I.
Breton I.
Scatari I.
Canso
Whitehaven
St. Paul
C. Ray
NEWFOUNDLAND
C. Freels
St. John
C. Spear
Miquelon
C. Pine
C. Race
Virgin Rks
Bank of Newfoundland.
Sable I.
Quebec to C. Race 860 M.
Halifax to C. Race 465 M.
Boston to C. Race 820 M.
N. York to C. Race 1010 M.
50
45
70
65
60
55
Engraved for the Nautical Magazin

At noon I left the deck for the purpose of working out the position of the ship. In about 15 minutes I heard the cry of "Hard starboard" from the officers of the deck. I rushed on deck, and had just got out when I felt a crash forward, and at the same moment saw a steamer under the starboard bow, and in the next moment she struck against our guards and passed astern of us.

The bows of the strange vessel seemed to be literally cut or crushed off for full ten feet, and seeing that she must probably sink in a few minutes, and taking a hasty glance at our own ship and believing we were comparatively uninjured, my first impulse was to endeavor to save the lives of those on board the sinking vessel. The boats were cleared, and the First Officer and six men left with one boat, when it was found our own ship was leaking fearfully.

The engines were set to work, being instructed to put on the steam pumps, and the four deck pumps were worked by the passengers and crew, and the ship headed for the land, which I judged to be about 50 miles distant. I was compelled to leave my boat with the First Officer and crew to take care of themselves. Several ineffectual attempts were made to stop the leak by getting sails over the bows, and finding the leak gaining on us very fast, notwithstanding our very powerful efforts for keeping her free, I resolved to get the boats ready and as many children and ladies placed in them as possible. But no sooner had the attempt been made than the firemen and others rushed into them, in spite of opposition.

Seeing this state of things, I ordered the boats astern to be kept in readiness until order could be restored, when to my dismay I saw them cut the rope in the bow, and soon disappear astern in the fog. Another boat was broken down by persons rushing at the davits, and many were precipitated into the sea and drowned. This occurred while I had been engaged in getting the starboard guard boat ready, and placed the second officer in charge, when the same fearful scene as with the first boat was being enacted, men leaping from the top of the rail, twenty feet, pushing and maiming those who were in the boat.

I then gave orders to the second officer to let go and row after the ship, keeping under or near the stern, to be ready to take on board women and children as soon as the fires were out and the engines stopped. My attention was then drawn to the other quarter-boat, which I found broken down, but hanging by one tackle. A rush was made for her also, and some fifteen got in and cut the tackle, and were soon out of sight.

I found that not a seaman was left on board, nor a carpenter; without any tools, to assist us in building a raft as our only hope, and the only officer left was Mr. Dorian, the third mate, who aided me, with the assistance of many of the passengers, who deserve great praise for their coolness and energy in doing all in their power up to the very latest moment before the ship sunk.

The Chief Engineer, with a part of his assistants, had taken our smallest deck-boat, and before the ship went down pulled away with about fifteen persons. We had succeeded in getting the fore and main yards and two topgallant yards overboard, together with such other small spars and materials as we could collect, when I was fully convinced that the ship must go down in a very short time, and that not a moment was to be lost in getting the spars lashed together to form a raft—to do which it became necessary to get the life-boat, our only remaining boat, into the water.

This being accomplished, I saw Mr. Dorian, the chief officer of the boat, taking care to keep the oars on board to prevent them from leaving the ship—hoping to get most of the women and children in the boat at last.

They had made considerable progress in collecting the spars, when an alarm was given that the ship was sinking, and the boat was shoved off without oars or anything to help themselves with; and when the ship sunk, the boat had got clear probably an eighth of a mile to leeward.

The ship went down gradually until the upper deck got level with the water, when the sea swamped over us, and at about a quarter to 5 P. M. she went down stern foremost, carrying every soul on board with her. I was carried down to a great distance with my son Willie in my arms, and opened my eyes to see if I could discover light through the water. It was some time before I could do so, and then it seemed a very long time before I reached the surface, when again I felt myself impelled downward to a great depth, and before I reached the surface a second time, had nearly perished, and lost the hold of my child.

As I again struggled to the surface of the water a most awful and heart-rending scene presented itself to my view. Over 200 men, women, and children struggling together amid pieces of every kind of wreck, calling on each other for help, and imploring God to assist them. Such an appalling scene may God preserve me from ever witnessing again.

I was in the act of trying to save my child when a portion of the paddle-box came rushing up edgewise just grazing my head, falling with its whole weight upon the head of my darling child. Another moment I beheld him lifeless in the water. I succeeded in getting on to the top of the paddle-box in company with eleven others—one, however, soon left for another piece, finding that it could not support so many.

During my struggle, I had cut my head badly, which caused it to bleed very profusely, and I was compelled for some time afterwards to wash it frequently, to keep the blood from blinding my eyes. Mr. Allen and I got upon the paddle-box at about the same time. The piece we were on was about twelve feet square, and we stood in the concave.

Others remained until they were, one by one, relieved by death. We stood in water at a temperature of forty-five degrees up to our knees. and frequently the sea broke directly over us. We soon separated from our friends on other parts of the wreck, and passed the night, each one of us expecting every hour would be our last. The wished-for morning came, surrounded with dense fog, not a living soul to be seen but our own party, seven now being left.

In the course of the morning we saw some water-casks and other things belonging to our ship, but nothing that we could get or afford us any relief. Our raft was rapidly settling. as it absorbed the water. About noon Mr. S. M. Woodruff of New-York was relieved by death. All the others now began to suffer very severely for want of water, except Mr. George F. Allen and myself.

Feeling myself getting exhausted, I now sat down for the first time, about 8 o'clock in the evening, on a trunk which providentially had been found on the wreck. In this way I slept a little through the night, and became somewhat refreshed. About an hour before daylight—now Friday, the 29th—we saw a vessel's lights near us.

We all three of us exerted ourselves to the utmost of our strength in hailing, until we became quite exhausted. In about a quarter of an hour the light disappeared to the east of us. Soon after daylight a bark hove in sight to the north-west, steering apparently for us, but in a short time she seemed to have changed her course, and again we were doomed to disappointment; yet I felt hopes that some of our fellow-sufferers may have been seen and rescued by them. Shortly after we had given up all hopes

of being rescued by the bark, a ship was discovered to the east of us, steering directly for us.

We now watched her with the most intense anxiety, as she approached. She was about seven miles off. She was seen through an arch which seemed to form in the fog, and gave us a clear view through it directly in the line of the ship. She continued standing towards us, but after awhile changed her course. Upon this our spirits again drooped. It was during the time that she was thus manœuvring that she picked up the Frenchman, who had belonged to the Vesta, and he immediately informed the officers of the Cambria—which proved to be her name—that there were probably other survivors in the vicinity, upon which Capt. Russell went aloft with his spy-glass, and discovered us. He stood towards us, took us first on board, then Mr. Smith, then a piece of wreck containing three firemen, and another with two others.

Of Capt. Russell it would scarcely be possible to say enough in his praise for the kind treatment we every one of us have received from him during the time we have been on board his ship. His own comforts he gave up in every respect for our relief. The Rev. Mr. Walker and lady, and another gentleman, who were passengers by the Cambria, have been unceasing in their endeavors to promote our comfort.

To them and to all on board we shall ever owe a debt of gratitude for their unbounded kindness to us. From the Frenchman who was picked up we learned that the steamer with which we came in collision was the screw-steamer Vesta, from St. Pierre, bound from and belonging to Granville, France. As near as we could learn, the Vesta was steering E. S. E., and was crossing our course two points, with all sails set—wind W. by S.

Her anchor stock, about seven by four inches square, was driven through the bows of the Arctic, about 18 inches above the water line; and an immense hole had been made at the same instant by the fluke of the anchor about two feet below the water line, raking fore and aft the plank, and finally breaking the chains, leaving the stock remaining in and through the side of the Arctic, or it is not unlikely that as so much of her bows had been crushed in, that some of the heavy longitudinal pieces of iron running through the ship may have been driven through our side, causing the loss of our ship, and I fear hundreds of most valuable lives.

Known to be saved:		
Passengers	21	
Officers	4	
Crew	50—	75
Known to be dead		5
Missing of Passengers		211
Missing of crew (about)		96
Total Passengers and Crew		383

SHIP-MASTERS AND MARINERS.

"*The fate of the ship shall be mine.*"—CAPTAIN LUCE.

THE unexampled growth of American Commerce for the past ten years has immeasurably enlarged the field of nautical life, and placed the profession of ship-master at the head of commer-

cial pursuits. Not only in the number, but in the increased tonnage of our ships, have the nautical profession been called to advance the high and noble standard of talent, practical sagacity, daring energy, superior attainments, and unexampled responsibility, which distinguish the competent navigator of the present age. The extensive employment of steam on ocean, lake and river—the superior size and model of our ships—the expansion of our coastwise and foreign commerce—opening new channels of traffic with distant countries, have all contributed to elevate the objects of their enterprise, as well as to advance their pecuniary reward.

So great is the demand for sail and steamship masters, and so rapid is promotion in every part of the Union, a much younger class of men reach the command of vessels than ever at any former period. The result is seen in the astonishing zeal and energy with which many pursue their gallant avocation. Nor does it stop here. The energetic and fearless commander jostles the fair-weather skipper, as he hauls out from his berth, and he, too, cuts off his port-yarns, casts off his fasts, and follows. Life is thus infused throughout the fleet, and as wave balances wave in commotion, the unceasing *rote* of business is echoed from every shore. It need not appear surprising, that the compensation of ship-masters has risen with their responsibilities to a commensurate sum. They often own a share in the ship; and not unfrequently, in addition to the ordinary wages, share a portion of the profits of the voyage. By such a union of capital and skill, our shipping is materially enhanced in efficiency and value. When it is considered how many new vessels of every class and description are annually added to the marine of the United States to be supplied with commanders, and add thereto the number whose places are made vacant by retiring from active life in the profession, or by disasters at sea, and the stern calls of the Commander above, it will be found that not less than 1,500 vessels require to be supplied annually with masters from among the mates and mariners of our shipping. No less than 1,400 new vessels of every description are now added annually to our marine. This extraordinary demand is followed up throughout every office on board the ship, and no man of

worth or ambition is content without promotion and better wages. The seamen, too, emulate for position, and obtain their wishes, or change their ship. These remarks do not apply to such as expect the full worth of their services in money, and care nothing for the merest modicum of honor; *their* services are found to be valuable in inverse proportion to their pay. Other things being the same, we think it has been proved by past experience, not only that large and swift ships are profitable to the owner, but that they enhance the remuneration of masters and seamen, builders and mechanics also. It will be found on computation, that 10,000 seamen are now required annually to man the new tonnage alone.

Upon these grounds, mainly, would we account for the acknowledged scarcity of seamen and competent ship-masters. The universal tide of prosperity has contributed to sustain the natural working of a law of nature, which seeks to give the laborer his due proportion of reward according to the value of his productive skill. If our ships are rendered superior in class and kind for the profitable investment of capital, wages will follow slowly after, and claim an elevation to correspond.

This increase of wages which has accompanied extended enterprise in building and navigating ships, has everywhere constituted an easy *circumstance* that has enabled many either to leave the profession of the sea for a more alluring lot, or to withhold their energies from a vigorous prosecution of it. It is also true, that many have gone to California, and to man the navies of Europe or our own country. The consequence is, that a very general complaint of the scarcity of seamen has come up from all parts of the coast, and the daily press has been at some loss to account for it. The *bad treatment* of seamen, and the *low rate of wages*, have been copiously enlarged upon to show that sailors are giving up their calling for better business. There is some truth in almost any argument, but we cannot regard such an hypothesis as in any measure adequate to explain the proposition. As we have shown, the wages of ship-masters are high, and other officers share in this advance, and the seaman himself receives more than formerly for his hardy toil. The highest berth in the profession is the standard to which the ambitious

and intelligent mariner aspires, and the hope of one day, not distant, reaching this goal, nerves him to the buffet of tempest and trial.

DISASTERS AT SEA, REPORTED FOR THE PAST MONTH.

*** *The names of ships are numbered, for reference to the remarks to follow.*

SHIPS.

No.	Name.	From.	To.	Date.
1	Harriet Hoxie	Liverpool	New-York	Aug. 17.
2	Peter Marcy	Leghorn	Philadelphia	—
3	St. Lawrence	Callao	New-York	—
4	Vasco De Gama	New-York	Antwerp	Sept. 9.
5	Golden Eagle	"	New-Orleans	—
6	Liberty	New-Orleans	—	" 8 & 10.
7	Edwin Flye	"	Liverpool	" 8.
8	Golden Eagle	New-York	New-Orleans	—
9	Lucy	Liverpool	Mobile	—
10	Minerva	New-Orleans	Bremen	—
11	Nath. Thompson	Gefle	New-York	—
12	Tehuantepec	New-York	Melbourne	—
13	Pauline	"	London	—
14	Josephine Harding	Newcastle	—	" 10.
15	Unknown	—	—	—
16	Unknown	—	—	—
17	Palmyra	Callao	Hampton Roads	—
18	Unknown	—	—	—
19	Ashland	New-Orleans	Havre	" 8.
20	Gazelle	Baltimore	Pernambuco	—
21	Light-Ship	—	—	—
22	Charles Huberton	—	—	Aug. 22.
23	Unknown	—	—	Sept. 9.
24	Unknown	—	—	" 12.
25	Castilian	Callao	Baltimore	—
26	Amelia	Liverpool	Charleston	" 8.
27	Helena Thompson	New-York	Australia	—
28	Sally Ann	—	—	—
29	Amerique	Cienfuegas	Marseilles	—

No.	Name.	From.	To.	Date.
30	Hannibal	Chincha Islands	Hampton Roads	Sept. 30.
31	Manchester	New-York	Panama	—
32	Brutus	—	—	—
33	A new ship	—	—	" 10.
34	Star King	Boston	San Francisco	—
35	Oliver Putnam	Newburyport	New-Orleans	—
36	Statira Morse	Glasgow	New-York	—
37	Delia Maria	Liverpool	Charleston	—
38	Helena	New-York	Australia	—
39	Shenandoah	Philadelphia	New-York	—
40	Unknown	—	—	—
41	Devonshire	Trieste	Leghorn	—
42	Parana	—	—	—
43	Brewster	—	—	—
44	Harriet Hoxie	London	New-York	—
45	Large frigate	—	—	—
46	James H. Shepherd	New-York	Kingston	" 13.
47	Patriot	Mansanilla	Bremen	—
48	Polacca Casamira	Havana	Halifax (N. S.)	" 7, 8, 9.
49	Arlington	"	New-York	" 11.
50	Unknown	—	—	—
51	Unknown	—	—	—
52	Don Quixote	Canton	New-York	—
53	Hannibal	Callao	Hampton Roads	—
54	Lady Caroline	—	—	" 4.
55	Pungastuck	Bristol (Eng.)	New-York	" 28.
56	Seldan	Memel	Boston	" 16.
57	Charles Frederick	New-Bedford	Pacific Ocean	—
58	Casamania	St. Pierre	New-York	" 14.
59	Lizzie Thompson	St. John's (N. B.)	Cork (Ireland)	" 25.
60	Kate Hayes	Callao	—	—
61	Universe	Liverpool	New-York	Aug. 29.
62	York	"	Quebec	" 29.
63	Shanghai	"	New-York	—
64	Samuel Badger	"	"	—
65	Andrew Foster	"	"	—
66	Quickstep	—	—	—
67	Fanny Giffney	New-York	Kingston	—
68	Dreadnaught	Liverpool	—	—
69	Unknown	—	—	Sept. 14.
70	Coronet	New-Orleans	Liverpool	Aug. 12.
71	Stormaway	St. John's (N. B.)	Dublin	—
72	Wildfire	Boston	Malta	—
73	Memphis	Havre	New-York	Sept. 13.
74	Unknown	—	—	—
75	Forest State	Bristol (Eng.)	New-York	" 6.
76	Guttenberg	Hamburg	"	—
77	Trenton	Marseilles	"	" 12.
78	Owego	—	—	" 12.
79	Victoria	Shields	"	" 18.
80	Stormaway	St. John's (N. B.)	Dublin (Ireland)	" 20.
81	John M. Wood	Liverpool	Boston	About Sept. 20.
82	Sea Witch	"	City Point	Sept. 14.
83	Caroline Tucker	Havre	New-York	" 17.
84	Charles and Jane	—	—	—
85	Walpole	Boston	Madras (Calcutta)	July 18.
86	Sofia	New-Orleans	Cadiz	Oct. 12.
87	St. Thomas	Mansanilla	London	—
88	Pride of the Sea	New-York	New-Orleans	" 4.
89	Unknown	—	—	" 10.
90	Franconia	Boston	New-Orleans	" 11.
91	Gondola	Havana	London	" 17.
92	Matilda	Liverpool	New-York	—
93	Radiant	New-York	—	—
94	The Palendar	Newport	Tralee	Sept. 28.
95	Schackamaxon	Liverpool	New-York	" 11 to 16.
96	James Watts	Smyrna	"	—
97	Palmyra	Chincha Islands	"	—
98	Ocean Queen	Liverpool	"	—
99	Unknown	—	—	—
100	Unknown	—	—	" 23.

REMARKS.

1. Lost sails, bulwarks, &c.
2. Lat. 44, lon. 52, lost sails and mizen topsail-yard, sprung rudder-head.

3. Ashore off St. Thomas, on a sand bar; have to remove cargo.
4. Built in Belgium; sprung aleak, shifted cargo, lost sails and bulwarks.
5. Ran into Norfolk; lost foremast and bowsprit, with other serious damages.
6. Lost sails, swept decks, and sustained other damages.
7. Lat. 31, lon. 30, shipped sea, started cutwater, &c.; leaks badly.
8. Lost foremast, main and mizen top-gallant masts, and strained hull.
9. Ashore on the Isle of Man, with seven feet water in hold; got off, and will be saved.
10. Collision at sea; lost jib-boom, cutwater, &c.
11. Sprung fore and main masts, and leaks badly.
12. Ran into Mauritius, leaking badly.
13. Lat. 45.40, lon. 38 W., lost sails and part of bulwarks; ship on beam-ends.
14. Lat. 42.44, lon. 52.13, lost sails.
15. Seen by schooner E. Meaker, dismasted, with painted ports.
16. Lat. 43.15, lon. 53.24, seen at sea burned to the water; had painted ports; appeared to be new, and loaded with cotton.
17. Put into Rio Janeiro for repairs.
18. Seen by bark Colonist, with nothing standing but mainmast.
19. Lat. 29.40, lon. 79.45, ran into Norfolk, lost rudder-head, cutwater, and sails, sprung masts, and is listed three strakes to starboard.
20. Ashore at New Point Comfort; will probably be got off.
21. Off Martin Industry's; probably foundered at her moorings, with two men aboard.
22. Total wreck on the coast of Ireland.
23. Passed by brig Julia, with loss of sails and some spars; had painted ports.
24. Passed by brig Julia, with loss of some spars.
25. Had foremast and main-top mast crippled.
26. Lat. 21, lon. 66.30, slightly damaged, lost sails, &c.
27. Hove main yard-arms in water, cut away mainmast and mizenmast, store-house, and other damage.
28. Whaler; total loss on one of the Friendly Islands; vessel fifty years old.
29. Cargo, rum and sugar; French; lost main and mizen masts, with fore-topmast.
30. Ran for Talcahuano in distress.
   A life-preserver found with "steamer Glasgow, No. 2," on it.
31. Ran into Montevideo to stop a leak.
32. Was ashore at Holmes' Hole; got off.
33. Seen off the west point of Antioch, fore-top mast and all above gone.
34. Clipper; lost some spars, a boat, and bulwarks.
35. Lat. 40.39, lon. 69, new vessel; lost all spars except foremast, all sails, and shifted cargo.
36. Lost fore-top mast, and all yards above main top-gallant and mizen-top mast, sails, &c.
37. Went ashore near Charleston; valued at $40,000; crew and passengers supposed lost.
38. Returned; lost all spars and sails except foremast, bowsprit, and jib-boom.
39. Lat. 40.59, lon. 67.43, hove on beam-ends, dismasted, shifted cargo, &c., and was abandoned; built in Philadelphia, 1839; valued at $25,000.
40. About 800 tons; dismasted at sea; cream-colored inside; anchors on the forecastle; seen by bark Lizzie Loud.

41. Wrecked, and sold for $4,000 in ballast—tonnage, 777.
42. Lost a boat, sails, and some spars.
43. Lost bulwarks and some sails.
44. West of Newfoundland Banks, lost bulwarks, sails, &c.
45. Partially dismasted, and head-gear gone; had a sign-board with Patriarch and number 500 on it.
46. Abandoned; valued at $22,000; built in Medford, 1838—635 tons; cargo, coal.
47. Ran into Baltimore, dismasted and leaking badly.
48. Lost mainmast and sprung aleak; ran for Charleston.
49. Lat. 41, lon. 66.10, lost sails, &c.
50. Lat. 35.19, lon. 14.20, standing to S., mainmast gone; painted black.
51. Seen off Fryingpan Shoals, at sea, bottom up, sheathed with zinc, by schooner Virginia.
52. Lost some sails in the Chinese Sea.
53. Ran into Talcahuano in distress, leaking six feet per hour.
54. Lat. 49.10, lon. 28.25, dismasted and abandoned; seen by the ship Colchis.
55. Lat. 45, lon. 35, leaking badly, and abandoned; valued at $20,000.
56. Lost main top-sail yard and some sails.
57. Whaler; supposed to be lost on the coast of California.
58. Ran into by a schooner; lost main chains, rail and quarter-boards, and one man.
59. Returned to St. John's leaking.
60. Returned to Callao in distress, and sold for $27,400.
61. In collision with ship York, lost jib-boom.
62. " " Universe, lost a topmast, jib-boom, &c.
63. Lost sails, &c.
64. Shifted cargo, lost sails, &c.
65. Split rudder-head, sprung main and main top-sail yards.
66. At anchor off Gravesend, and was run into by a steamer, lost fore yard, and had starboard bow damaged.
67. Got ashore at Bonaire, was got off, and went to Kingston, Ja., in distress, leaking badly.
68. Got ashore, and floated off at high-water.
69. Seen off Georgetown, S. C., dismasted.
70. Lat. 27, lon. 81, struck by lightning, lost some small spars, killed five men, and wounded several others.
71. Ashore on Rock Reefs, lost mainmast, and sprung aleak.
72. Put into Gibraltar; been in collision off Cape Spartel, lost some stanchions, rail, &c.
73. Lost sails, &c.
74. Wrecked on Bull's Island, French vessel.
75. Lat. 47.20, lon. 31.55, lost fore and main top-gallant masts, royal masts, and mizen-top mast, &c.
76. Lost sails, bulwarks, and part of rail and stanchions.
77. Lat. 38, lon. 45.30, lost sails and spars, and received other damage in a hurricane.
78. Lat. 38.36, lon. 46.40, lost some sails and three boats—whaler.
79. Lat. 50, shifted cargo, lost bulwarks, &c.; one man injured.
80. On the rocks six miles N. of Aberdovey, mainmast gone, and fourteen feet water in hold.
81. Put into Cork, lost spars in a gale.
82. Struck by a sea, started stem, and leaks badly.
83. In collision with a bark, and ran back to Havre leaking.

84. Stranded at Bredgrunden, Sweden, in stormy and foggy weather; built in Bath, Me.
85. Lat. 17.25 S., lon. 79.27 E., sprung aleak, and ran into Mauritius in distress; cargo discharged.
86. Returned to New-Orleans in distress—Spanish.
87. Lost on Jardinello's Bank; valued at $48,000; 668 tons—built in Bath.
88. Ashore on South Point, was got off, and taken to New-Orleans.
89. Was seen on fire about fifteen miles from New-Haven, and finally sunk.
90. Shifted cargo in a hurricane, and took fire in the Mississippi River; lost main-top mast.
91. Lost part of cargo, and leaking badly.
92. Sprung mizen-mast, and received other damage.
93. At Valparaiso, had been struck with lightning at Cape Horn, lost fore-sail, &c.
94. In collision with the Diadem, and lost mainmast, with all attached, also quarter-boat, and received other damage.
95. British; received much damage to spars and rigging, lost two suits of sails.
96. Lost sails, &c.
97. Condemned at Rio Janeiro.
98. Lost sails, &c.
99. A British ship; abandoned in Gulf of Mexico; crew rescued by bark Greenfield.
100. Lat. 28.33, lon. 90.22, seen bottom up by French bark Deux Sœurs.

BARKS.

*** *The names of barks are numbered, for refernece to the remarks to follow.*

No.	Name.	From.	To.	Date.
1	Douglass	—	—	—
2	Unknown	—	—	—
3	Saranac	Charleston	New-York	About Sept. 10.
4	Swan	—	At Pernambuco	Sept. 10.
5	Niagara	Liverpool	Montreal	—
6	Colonist	Havana	Hamburgh	—
7	Imaun	—	New-Zealand	—
8	Harmonie	—	—	—
9	Thomas Corwin	Cape Haytien	New-York	" 10.
10	Lewellyn	Cadiz	"	" 11.
11	Caroline	Charleston	"	—
12	Zingari	Bavaria	Singapore	May 29.
13	Levant	Matanzas	Philadelphia	Sept. 6 & 10.
14	Unknown	—	—	" 14.
15	Columbine	Callao	Rotterdam	—
16	Mary	New-Orleans	Gottenburgh	" 6.
17	Chalcedony	Puget Sound	San Francisco	" 4.
18	Reindeer	Baltimore	Caribbean Sea	" 4 to 8.
19	Nelly and Rachel	Montevideo	St. Thomas	—
20	Thomas Dallett	Porto Cabello	Philadelphia	—
21	Unknown	—	—	" 14.
22	Pilgrim	Shields	New-York	Aug. 27.
23	Unknown	—	—	—
24	Magdalena	—	—	—
25	Corporal Trim	Liverpool	Portland	—
26	Childe Harold	—	St. Jago	Sept. 30.
27	Britannia?	Callao	Baltimore	July 10.
28	Unknown	New-York	—	—
29	General Taylor	Boston	Port Wallace(N.S.)	—
30	May Flower	Liverpool	New-York	—
31	Amelia	New-Orleans	"	Sept. 20.
32	Crisis	New-York	Baltimore	—
33	Hygeia	—	—	June 12.

No.	Name.	From.	To.	Date.
34	Unknown	—	—	Sept. 23.
35	Trumpet	—	—	" 14.
36	J. B. Johnson	Bremen	New-York	—
37	Amelia	London	—	Aug. 26.
38	Wild Fire	Boston	Malta and Sicily	Sept. 5.
39	Rodman	Trapane	Boston	" 3.
40	Agenora	Shields	New-York	" 10.
41	Old Hickory	"	Calcutta	—
42	Maria	Baltimore	Charleston	—
43	William Henry	Pictou	Providence	" 10.
44	Oramacto	Liverpool	New-York	" 11.
45	Henrietta Sophia	Newcastle	"	—
46	Brazilerio	—	—	—
47	Levant	Matanzas	Philadelphia	" 10.
48	Wm. H. Chandler	Pictou	Providence	" 10.
49	Iddo Kimbal	St. Steven's (N. B.)	Bristol (Eng.)	" 8.
50	Harvest	Liverpool	New-York	" 11.
51	Julia Dean	New-Orleans	"	—
52	J. W. Blodget	Sisal	"	" 8.
53	Unknown	—	—	—
54	Edward	—	—	—
55	Delia Chapin	Bordeaux	New-York	—
56	Appaline	—	Manchester	Aug. 26.
57	Morning Star	Curacoa	New-York	Sept. 7.
58	America	—	—	—
59	Unknown	—	—	—
60	Mary Sawyer	Rio Janeiro	Boston	" 20.
61	Octavia	Matanzas	"	" 8.
62	Active	Tabasco	Genoa	—
63	Como	Charleston	Boston	—
64	Unknown	—	—	—
65	Unknown	—	—	—
66	Unknown	—	—	—
67	Indiana	Cienfuegas	New-York	" 10.
68	Sarah	Pictou	Boston	" 3.
69	Era	—	Eastport	" 10.
70	Frontier	Smithville (N. C.)	St. Domingo	—
71	Esther	Cadiz	New-York	—
72	Napoleon	Portland	Matanzas	" 11.
73	Argo	Philadelphia	Boston	" 11.
74	Condor	"	"	" 11.
75	Mary Sears	Port Lavacca	New-York	—
76	Billow	—	—	—
77	Mary Ann	Charleston	Attakapas	—
78	Frontier	—	St. Domingo	" 13.
79	Laurilla	Cape Haytien	Boston	—
80	B. M. Prescott	Pictou	Philadelphia	" 10.
81	Webster	—	—	" 7.
82	Q. D. Pennell	—	—	—
83	Ormus	Philadelphia	New-Bedford	—
84	Patriot	—	—	—

REMARKS.

1. Ashore at Tybee Inlet.
2. " " " Prussian.
3. Lost foremast, deck load of lumber and bulwarks, vessel leaks badly.
4. Leaks badly, damaged half of the cargo—lumber.
5. Isle Madame; was ashore, got off, and sold for £2,800.
6. Hamburgh; hove on beam-ends, lost everything above heads of fore and main masts; leaks badly, and cargo damaged.
7. Had a collision with an iceberg near Cape Horn; ran for Rio Janeiro.
8. Was a fishing vessel, and has foundered—French.
9. Lat. 39.10, lon. 74, lost deck load and some sails.
10. Lat. 39.10, lon. 17, lost sails, boats, and had decks swept and houses filled with water.
11. Lost sails.
12. Abandoned on Brown's shoal; was seen near Brother's Islands water-logged on June 1.

13. Lost deck load, stove boat and bulwarks, and sprung jib-boom.
14. Lat. 34.47, lon. 74.53, seen with loss of foremast, main top-gallant and mizen-top mast.
15. Put into Hampton Roads.
16. Struck on Colorado Reef, near Cape San Antonio; 260 tons; could not float off, took fire, and burned.
17. Got ashore on Dungenees Spit in a fog, and got off leaking badly.
18. Towed into Charleston dismasted; lost all spars, rigging, sails, and otherwise damaged.
19. Leaking badly; sails and spars in bad condition—cargo, hides.
20. Encountered tornado; carried away fore top-gallant mast and sails, damaged vessel and rigging.
21. Lat. 35.48, lon. 61.55, main-top mast carried away.
22. Shifted cargo, split sails, &c., lat. 40.28, lon. 55.
23. Seen by steamer Jamestown wrecked at sea, twelve miles from Barnegat.
24. Supposed to be wrecked near Rio Janeiro.
25. Partly sunk off St. Thomas Island; valued at $25,000—500 tons.
26. Got ashore entering Cienfuegas, was assisted off by Spanish authorities.
27. British; ran into Montevideo with loss of bulwarks, rudder-head and stern-post loose, and leaking badly.
28. Ashore on Romer Shoal; got off, and proceeded to sea.
29. Ashore on Toddy Rock—going to sea.
30. Lost sails, jib-boom, &c.
31. Lat. 31.06, lon. 24, sprung aleak, stove boats and water-casks, &c.—cargo, sugar.
32. Capsized, and one life lost; rest of crew saved.
33. Wrecked on the Prata shoal—Chinese.
34. Seen ashore at Shallop Creek, with topsail set—in ballast.
35. Lat. 43.38, lon. 53.07, foundered; crew rescued by bark Feronia.
36. Lost rail, bulwarks, sails, &c.
37. British; went ashore at San Simon Bay, on the Pacific, and had been ashore before on the Falkland Islands.
38. In collision off Cape Spartel, and ran into Gibraltar in distress, bulwarks, stanchions, &c., carried away.
39. Ran into Gibraltar leaking badly.
40. Leaking badly, abandoned, and crew taken off on ship Oxnard.
41. Going to sea, got on the bar, and was got off.
42. Dismasted at sea.
43. Decks swept, and lost sails.
44. Shifted cargo and lost sails off Nantucket—British.
45. Damaged spars and boats.
46. Total wreck near Vera Cruz; valued at $10,000.
47. Lost deck load, stove boats, and injured hull.
48. Stove houses, swept decks, &c.
49. Ran into Halifax leaking.
50. Lat. 40.20, lon. 68.30, shifted cargo, lost sails, and swept decks.
51. Filled cabin and forecastle with water, and lost some spars.
52. Cut away masts, lost boats and sails, and filled cabin with water.
53. Ashore at Little Egg Harbor—cargo, yellow pine.
54. Ran into Lewes, Del., for anchors and cables—Prussian.
55. Lost sails.
56. Ashore at Baracoa—total loss.
57. Ashore near Wilmington; has been got off—cargo, salt.

58. Lat. 29.30, lon. 76 W., lost boats, spars on deck, and sprung rudder-head.
59. Seen steering for Charleston, mizen-mast standing, and stump of fore and main, carrying sail; a gale soon afterwards.
60. Ashore at South Beach; will probably be saved.
61. Lost deck load, stove boats, and split sails.
62. Ran for Savannah, leaking badly.
63. Ran back to Charleston, four feet water in hold.
64. Seen with nothing but stumps of masts above water.
65. Seen at sea with only tops of masts out.
66. Lat. 33, lon. 76, lost foremast; seen by the J. W. Blodget.
67. Started house and cargo, and stove boat.
68. Ashore at Sound Point, Gut of Canso.
69. Cast over thirty thousend feet of lumber to save vessel—new.
70. Abandoned at sea, being dismasted and water-logged.
71. British; stove bulwarks, lost sails, vessel strained and leaking.
72. Lat. 34.30, lon. 70, lost fore yard and sails; run in for repairs.
73. Lost galley, bulwarks, &c.; lat. 40.20, lon. 73.
74. Lat. 40.20, lon. 73.30, lost boats, &c.; leaking badly—cargo, coal.
75. Stove bulwarks, lost sails, &c.
76. Seen at sea abandoned.
77. Total loss at Tybee Inlet.
78. Disabled—passed by steamer Nashville.
79. Run into Charleston dismasted.
80. At Cape Poge, ashore—will be got off.
81. Capsized; has been righted again.
82. Holmes' Hole—ashore—will be got off.
83. Lost sails, bulwarks, and part of deck load.
84. Block Island—total wreck.

BRIGS.

*** *The names of brigs are numbered, for reference to the remarks to follow.*

No.	Name.	From.	To.	Date.
1	Black Swan	Pensacola	Boston	—
2	Unknown	—	—	—
3	Texas	—	—	—
4	Hygeia	Trieste	—	—
5	R. Stevenson	Marseilles	New-York	Sept. 11.
6	Condoua	Turk's Island	Providence	" 10.
7	Lillian	East Port	Baltimore	—
8	Elizabeth Hinds	—	—	—
9	Comet	Charleston	New-Bedford	" 27.
10	Julia	—	—	" 9 & 11.
11	Martin Van Buren	—	—	" 12.
12	Baron De Castine	Philadelphia	Boston	" 10.
13	Lady of the Lake	Bangor	—	" 18.
14	Piedad	St. Jago	Bremen	" 4 & 5.
15	Eureka	—	—	—
16	E. Hinds	Georgetown, S. C.	Brunswick, Me	—
17	R. M. Charlton	Savannah	Havana	" 8.
18	Selah	Pictou	—	" 12.
19	Unknown	—	—	—
20	Isabella	—	—	—
21	Unknown	—	—	—
22	Marcellus	Alexandria	New-Bedford	" 21.
23	Charles Horton	New-York	Charleston	—
24	Orizana	Matanzas	Portland	" 8.
25	Emily	Philadelphia	Newburyport	" 10.
26	Q. W. Elwell	Jacksonville	New-York	—
27	Francis	Pictou	Warren	—

No.	Name.	From.	To.	Date.
28	Union	Jacksonville	Bath, Me	Sept. 8.
29	Orion	"	"	—
30	Frontier	Wilmington	St. Domingo	—
31	Charlotte	New-York	Charleston	—
32	Unknown	—	—	—
33	Husuo	Havana	Spain	—
34	Union	—	Bath, Me.	—
35	Orient	—	—	—
36	Pilgrim	Shields	New-York	Aug. 27.
37	South Durham	Marseilles	—	—
38	Martha Kinsman	Cardenas	Portland	Sept. 8.
39	General Pinckney	Baltimore	Rio Grande	—
40	Venus	—	—	—
41	Cosmopolite	St. Mary's, Ga.	Portland	—
42	Factor	New-York	Charleston	—
43	Celt	Boston	Jacksonville	" 7 & 8.
44	Jesusa	Havana	Malaga	—
45	Commerce	Charleston	New-Bedford	—
46	Panchita	Havana	Barcelona	—
47	Frances	Gonaves	New-York	" 10.
48	Nisibis	St. John's, N. F.	"	—
49	Shamrock	"	"	" 10.
50	Selah	—	—	" 12.
51	Pamaho	Philadelphia	Weymouth, Mass.	—
52	Augusta	Savannah	New-York	" 7 & 8.
53	Vermont	Philadelphia	Mobile	—
54	Poultney	Liverpool	Baltimore	" 10.
55	Neuea	Hong Kong	San Francisco	" 21.
56	Unknown	—	—	—
57	Sophie	Porto Rico	New-York	—
58	Unknown	—	—	—
59	Emily Johnson	Philadelphia	Newburyport	" 19.
60	Unknown	—	—	—
61	Charlotte	New-York	Charleston	—
62	Unknown	—	—	—
63	A. Dunbar	—	Boston	—
64	Hannah Balch	Eastport	Wilmington	—
65	Elsinore	Darien	Portland	" 8.
66	Koloa	"	New-York	" 8.
67	Thomas Conner	—	Portland	" 10.
68	Mary	Port Lavacca	New-York	" 8 to 11.
69	Sarah Wooster	Jacksonville	Boston	" 8.
70	Sarah	Pictou	"	" 3.
71	Julia	Galveston	"	" 9.
72	Star Light	Balize	New-York	" 7.
73	Cobden	Apalachicola	Boston	" 8 & 9.
74	Black Swan	Pensacola	"	—
75	Tiberias	Galveston	"	" 8.
76	A. B. Van Olinda	Boston	Wilmington	" 20.
77	L. W. Maxwell	—	Key West	—
78	Clarissa	Philadelphia	Boston	—
79	Invincible	Havre	Cadiz	" 29.
80	Daniel Huntley	—	—	—
81	Ann	—	—	" 27.
82	Advance	Baltimore	New-York	" 25.
83	Chief	Aspinwall	Baltimore	—
84	Brazil	Nova Scotia	Salem	" 21.
85	Webster Kelly	Harvey (N. B.)	New-York	" 25.
86	Royal Southwick	Charleston	"	" 23.
87	Unknown	—	—	" 20.
88	Lordison	Newcastle	New-York	" 27.
89	Caroline	Rochelle	"	June 13.
90	Unknown	—	—	—
91	Unknown	—	—	Sept. 28.
92	Frances	Pictou	Warren	"
93	Douglass	"	—	Oct. 1.
94	Abby and Elizabeth	Baltimore	Boston	Sept. 29.
95	Comet	Charleston	New-Haven	" 27.
96	Crocus	Pictou	Providence	" 30.
97	Unknown	—	—	" 21.
98	Ann C. Pratt	Attakapas	Philadelphia	" 8 to 10.
99	Unknown	—	—	Oct. 8.
100	St. Andrew	Boston	Charleston	" 6.
101	Unknown	—	—	Sept. 22.
102	Unknown	—	—	" 22.

REMARKS.

1. Badly wrecked, towed into Wilmington, since condemned and sold.
2. " . " Spanish.
3. Seen off Wilmington in distress.
4. Norwegian; crew and passengers nearly starved; fourteen days without bread.
5. Lost sails and damaged vessel—British.
6. Lost galley and water-casks; sprung aleak.
7. Lost spars, sails, &c.; sprung aleak during the gale.
8. To the N. of Romain, ashore on Cedar Island; will be a wreck.
9. 256 tons, valued at $10,000; dismasted; captain and five men washed away; vessel abandoned.
10. Shipped seas, demolished cabin, and filled forecastle with water.
11. Found at sea, lat. 39.20, lon. 74.06; afterwards came ashore at Carson's Inlet, Cape May; 200 tons.
12. Lost mainmast and boats.
13. Below Providence, went ashore at Sabine's Point; may be got off.
14. Off Bermuda, lost mainmast at deck, some spars on foremast, stove bulwarks, &c.
15. Broke adrift from Charleston, lost masts and rudder, and went ashore.
16. Anchored off Georgetown Bar, parted her cable, and went ashore on Cedar Island, north of Cape Romain.
17. Lost sails and sprung aleak.
18. Took fire; rigging and sails burned, also cabin; she was beached and scuttled; cargo, coal.
19. Near Barnegat, was seen by steamer Jamestown; had a white stripe.
20. Went ashore at Dunkirk, Lake Erie.
21. Ashore on coast of China; seen by ship Don Quixote, north of Variella.
22. Ashore at Rip Raps; will be a total loss; cargo, coal.
23. Lost main top-gallant mast and fore top-gallant yard.
24. Lost boats, galley, deck load, and sails.
25. Ashore at Holmes' Hole; has been got off; leaks badly.
26. Abandoned at sea; vessel valued at $6,000.
27. Ashore Gut of Canso; lays in bad position.
28. Dismasted at sea; vessel abandoned.
29. Was seen full of water, and abandoned at sea.
30. Abandoned, was seen at sea in tow of a vessel.
31. Carried away main top-gallant mast and yard.
32. Seen at sea, bottom upwards.
33. Spanish; lat. 30.19, lon. 78.06, on beam-ends, cut away mainmast, stove bulwarks, filled cabin with water.
34. Dismasted, and left in a sinking condition; cargo, lumber.
35. Lat. 32, lon. 79 W., seen at sea dismasted; supposed all perished.
36. Shifted cargo, lost sails, &c., in lat. 48.28, lon. 35.
37. Towed into port leaking.
38. Lat. 32, lon. 75, lost deck load, bulwarks, and sails.
39. Leaking; will have to heave out for repairs.
40. Ashore at Holmes' Hole; got off without damage—British.
41. Lost deck load.
42. Lost fore top-gallant mast and main-top mast, with other damages.
43. Vessel on her beam-ends; lost foremast, main-top mast, and jib-boom, had decks swept, and lost sails.
44. Dismasted, had decks swept, and leaks badly, and put into Wilmington in distress.

45. Lost both masts, and is a total wreck.
46. Leaking badly; ran for Baltimore in distress—Spanish.
47. Lost deck load, split sails, &c.—British.
48. Lost fore-top sail.
49. Lost fore-top sail and jib.
50. Took fire, burned cabin and rigging, was beached and scuttled.
51. Holmes' Hole; lost cables, anchors, sprung bowsprit, leaks badly.
52. Lost sails, &c.
53. Ran for Norfolk, carried away mainmast seven feet below bends, and damaged rigging also.
54. Vessel on beam-ends, cut away spars, and found eight feet water in hold, and pumps choked; abandoned vessel, and were found.
55. Swedish; lat. 37.40, lon. 128.54, carried away fore and main top-sail yards, damaged rigging.
56. Lat. 35, lon. 73.40, was seen with all masts gone; had a small spar put up, with the Jack on it.
57. Spoken by schooner Fanny; had lost all sails.
58. Ashore on the Island beach, near Barnegat, dismasted; thought to be the Garden, or Gardner; hails from Prospect.
59. Ashore at Holmes' Hole; leaks badly, &c.; cargo, coal.
60. Seen at sea, bottom up, hull painted black, white streak and water-line.
61. Carried away fore top-gallant yard and main top-gallant mast.
62. Passed off Cape Hatteras dismasted and abandoned; cargo, lumber.
63. Lat. 40.40, lon. 69.50, lost boats, galley, and everything movable, also most all the sails; leaks badly.
64. Near Nantucket Shoals, lost fore-sail and top-sail, and was buried under, till water-casks on quarter-deck floated.
65. Carried away fore-top mast, head of main-top mast, jib-boom, and cut-water, and otherwise damaged.
66. Carried away foremast even with deck, and lost boat; was spoken by schooner Charles Roberts, and supplied with provisions.
67. Lost fore-top mast and main sail, and otherwise damaged.
68. Stove bulwarks, split sails, &c.
69. Sprung aleak, and carried away all sails.
70. Was seen ashore on Sand Point, Gut of Canso; can be got off.
71. Carried away starboard quarter, stove cabin windows, demolished cabin.
72. Carried away fore and main-top masts.
73. Lat. 32.40, lon. 79, lost fore top-gallant mast, part of deck load, bulwarks, and sails.
74. Lost fore and main masts, had decks swept clean, and leaks badly; cargo, lumber.
75. Lat. 32.47, lon. 78, lost some spars and sails, and all deck load of molasses, 100 barrels.
76. At Wilmington, leaking.
77. Wrecked on the eastern dry rocks (Fla.); will be a total loss; cargo, mahogany.
78. Lat. 40.77, lon. 12.18, was boarded in a sinking condition, and crew rescued; sunk in one hour; cargo, coal.
79. Sprung foremast, and leaking; put into Charleston for repairs.
80. Lat. 51.9, lon. 35.22, (British,) spoken by steamer Alps, under jury foremast; wanted no assistance.
81. Of Windsor, N. S., bottom up, and both masts gone; forty miles E. of Cape Island, (N. J.)

82. Sprung aleak off Sharp's Island, and returned to Baltimore.
83. Sprung aleak at sea; ran into Havana; will have to be calked thoroughly.
84. Struck on (W.) Quaddy Head, and stove a hole in bottom; cargo, wood.
85. Ran into St. John's, N. B., leaking badly.
86. Lat. 33.53, lon. 76.15, was found water-logged and abandoned; crew rescued.
87. Was seen ashore off Little Creek, N. S.
88. British; abandoned at sea; crew taken off by ship New-York Packet.
89. Lost sails, jib-boom, &c.
90. Lon. 17 W., burned; crew rescued by bark Calcutta.
91. Lat. 35.30, lon. 74.55, seen, with foremast and bowsprit standing, by brig Faithful.
92. Went ashore in Gut of Canso, was much injured, but got off, and since condemned—sold for $250.
93. Ashore on Connimicut Point; got off without damage.
94. Struck on the Hedge fence, Holmes' Hole; remained ten hours, and got off.
95. Fallen in with, dismasted and abandoned, twenty miles south of Frying-pan Shoal.
96. Near St. George's Banks, stove galley, swept decks, and received other damage.
97. Ashore near Sand Key Light-Boat, total loss; crew saved.
98. Ashore on High Islands, between Galveston and Sabine; probably a total loss.
99. Anchored in Tarpaulin Cove, with foremast gone.
100. In collision with schooner Ellen Maria, she sunk in five minutes, and we ran back for Boston in distress, bowsprit and cutwater started.
101. Lat. 33.20, lon. 77.17, seen, water-logged and abandoned, with both masts gone, by bark Amelia.
102. Lat. 33.47, lon. 77.20, seen, water-logged and mainmast standing, by bark Amelia.

SCHOONERS.

Balloon, from Bangor to Providence, October 3, ashore on Bullock's Island, got off without damage.

Challenge, from Pictou, N. S., to Providence, sprung aleak, and put into Camden for repairs.

Ocean Wave, from New-York to ——, with 2,500 bushels salt, September 29, ashore two miles north of Chickamacomico, vessel slightly damaged, and cargo all lost.

Trumpet, September 14, foundered at sea, crew rescued by bark Fredonia.

Unknown, September 29, was seen four miles west of Quoddy Light, on beam-ends, apparently abandoned, no boats seen.

F. L. Jones, from Richmond to Boston, October 2, ashore on N. E. point of George's Island, got off with little damage.

Choctaw, from Port Ewen to East Greenwich, October 1, in collision with schooner Heroine, and lost bowsprit, jib-stay, and otherwise damaged.

Lion, from Gardiner to Boston, October 2, carried away foremast.

Unknown, about 300 tons, September 19, seen on a reef five miles S. E. of west Caicos Bay, dismasted and abandoned.

Kaloa, of New-York, from Darien to Fair Haven, latitude 31, longitude 81, lost foremast and rigging, and part of deck load.

Mary E. True, from Lubec to New-York, October 3, lost sails off Cape Cod.

Ontario, from Rockland to Boston, September 27, total loss on Devil's Back, in Broad Sound, four seamen drowned.

Talent, from Newbury to Boston, with sand, September 29, coming through the gap at Rockport, she struck and capsized, masts came out, vessel sunk.

Unknown, sloop came in contact with a schooner off Nahant, and is supposed to have capsized.

Richmond, of Baltimore, from Turk's Island to Wilmington, in ballast, October 3, went ashore, total loss.

T. Pharo, from Philadelphia to Newport, September 25, came in collision with schooner Paragon, lost jib-boom, &c. The Paragon lost main-boom and main-sail.

Charles Roberts, from Boston to Wilmington, N. C., September, sprung aleak at rate of 900 strokes per hour.

Ella Simmonds, from Rock Island to Wilmington, with lime, September 10, went ashore near Rogue Inlet, took fire, which was extinguished. She can be got off.

H. A. West, from Rappahannock to Providence, September 10, lost boat and some sails, and received other damage.

Tiger, from Philadelphia to Saco, September 15, ran into Edgartown with loss of boat, sails, and other damage.

Pacific, slightly injured in the gale at Lavacca, Texas.

Atlas, assorted merchandise, September 21, went ashore at Indianola; cargo saved in a damaged state; may be got off.

Fanny Mott, assorted merchandise, went ashore at Indianola, will be a total loss; cargo saved in a damaged state.

S. Belden, from Mobile to Matagorda Bay, went ashore on a reef in the Bay, total wreck, crew perished.

Alida, from Mobile to Matagorda Bay, was capsized, and totally lost on a reef in the Bay, crew all perished.

Mustang, from New-York to Port Lavacca, September 18, in Matagorda Bay, escaped the Alida's fate, with loss of both masts.

Fairy, owned by Light-House Department, ashore at Matagorda Bay, and is a total loss.

Unknown, from Sabine to Matagorda Bay, with lumber, lost on the Texas coast.

Tom Paine, totally lost in Matagorda Bay, with crew.

Unknown, from Sabine to Apalachicola, went ashore near Sand Key Light Boat, total loss, crew saved, and part cargo.

THE CLIPPER SHIP HURRICANE.

LOG OF VOYAGE FROM NEW-YORK TO SAN FRANCISCO.

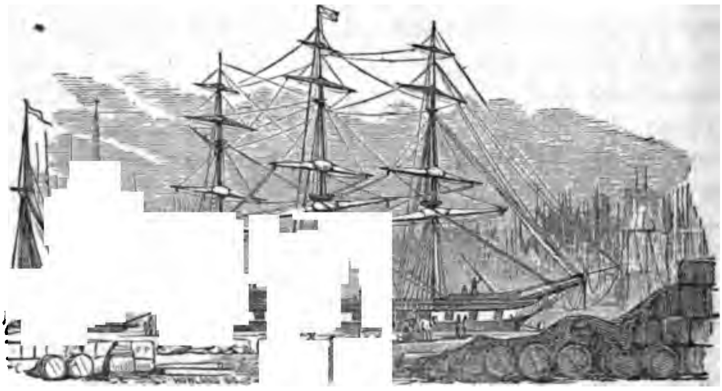
THE clipper ship *Hurricane*, Captain Very, left New-York on the evening of May 27th, and arrived in San Francisco on the afternoon of September 4th; making the passage, with light winds and calms, in 99 days and 18 hours.

The *Hurricane* was 22 days and 16 hours to the Equator,

having sailed 4,090 miles. Forty-seven days and sixteen hours out, Cape Horn was doubled. Seventy-six days and 16 hours out, crossed the Equator, in longitude 117° 36′ West. On the 82d day out, was just 1,500 miles below San Francisco. On the 85th day out, was 1,040 miles from that port; and it will be remembered that, in the celebrated passage of the *Flying Cloud*, in 1851, she was 887 miles from San Francisco on her 85th day out. By the log, the *Hurricane* sailed 17,384 miles, from port to port, averaging 7.16 miles an hour during the passage. She was from 5 to 15 hours each day in dead calms, off the Horn.

Date.	*Dist. Sailed. Miles.*	*Wind.*
May 27	38	N. N. W.
" 28	202	N. to W.
" 29	133	N. to W.
" 30	94	N. to E.
" 31	90	S. S. E.
June 1	150	Do.
" 2	204	Do., squally.
" 3	238	S. S. W.
" 4	272	S. S. W. and S.
" 5	245	S.
" 6	176	S. S. W., squally.
" 7	143	S. S. W.
" 8	132	S.
" 9	90	S. by E.
" 10	237	S. E.
" 11	258	S. E. by E.
" 12	272	E. by S.
" 13	253	E.
" 14	206	E. by N.
" 15	177	E. by S.
" 16	55	S., calms and var. winds.
" 17	92	S. S. E.
" 18	223	S. E
" 19	210	S. E., light aire.
" 20	141	S. S. E., in squalls.
" 21	213	S. E.
" 22	218	S. E. by S.
" 23	273	S. E. by E.
" 24	227	Do.
" 25	183	E. and N. E.
" 26	159	N. E.
" 27	135	N. E., calms.
" 28	140	S. and S. by E.
" 29	155	N. E. by N.
" 30	220	S. W. by S.
July 1	210	W.
" 2	203	S. S. W.
" 3	197	W. by N.
" 4	100	E.
" 5	268	N. E.
" 6	206	S.
" 7	68	N. E., calm.
" 8	167	Do., calm.
" 9	112	S. W. to N., calm.
" 10	62	S. E., do.
" 11	55	Do. do.
" 12	77	S., do.
" 13	83	W., do.
" 14	117	N. W., do.
" 15	114	S. and S. by W.
" 16	125	Do. do., calm.
July 17	76	W., calm.
" 18	148	Do., do.
" 19	156	W. to W. by N.
" 20	118	N. W.
" 21	52	S. W., calm.
" 22	77	N. to N. N. W., calm.
" 23	191	N. W.
" 24	134	S. W.
" 25	73	N. W., calm.
" 26	120	Do., do.
" 27	138	N. N. W.
" 28	127	Do.
" 29	76	W. S. W.
" 30	177	W., calms.
" 31	74	S. E.
Aug. 1	263	Do.
" 2	250	S. S. W.
" 3	250	S. and S. S. W
" 4	252	S. E.
" 5	265	Do.
" 6	279	E. N. E.
" 7	209	Do.
" 8	238	Do.
" 9	241	Do.
" 10	200	Do.
" 11	110	Do., calms.
" 12	98	S. E., calms.
" 13	187	S. E. by S.
" 14	178	S. S. W.
" 15	252	S. W., gales.
" 16	182	Do., calm.
" 17	152	N. N. W., calm.
" 18	178	N. W.
" 19	190	N. W. by W.
" 20	159	S. W. by W.. light airs.
" 21	32	Do., no steerage way.
" 22	161	N. by W.
" 23	184	Do.
" 24	186	N. N. W.
" 25	76	Do.
" 26	71	N.
" 27	135	N. N. E.
" 28	75	Do., calms, faint airs.
" 29	39	Do., light airs.
" 30	117	N. W., calms.
" 31	53	N.
Sept. 1	171	N. N. W.
" 2	172	Do.
" 3	140	N. E. by N.
" 4	25	S., light airs.

Commercial and Financial.



A GLANCE AT THE SHIPPING INTERESTS OF NEW-BRUNSWICK.

The city of St. John, the commercial capital of the Province of New-Brunswick, is situated at the mouth of a river bearing the same name. At the present time St. John, with the adjoining town of Portland, possesses over 40,000 inhabitants. The city is of recent origin. In the memorable year 1783, a band of devoted loyalists landed in the city—then called Parr-town; they arrived in three vessels, and are recognized as the founders of the city, which received a royal charter from George the Third, in 1785. Prompt measures were adopted by the British Government to aid these patriotic people, as I find, during the year 1783 and '84, the sum of $26,885.30 was disbursed by the Imperial Treasury, towards providing timber and other building materials for the use of the infant colony.

Ship-building was first commenced in New-Brunswick in 1784, the largest vessel launched that year not exceeding 100 tons. In 1786, the notorious Benedict Arnold, who had resided in St. John for some time previously, procured a vessel to be built for him, which he named the "Lord Sheffield;" he also applied to the city government for a grant, or lease, of water lots for maritime purposes. The building he then occupied is still in existence, and several of our old people well recollect

him; but not for his *many* virtues, as I believe in private, as well as in public life, Arnold procured for himself no *sincere* friends. In 1787, a registration of all the vessels owned by inhabitants of New-Brunswick was compiled. At this early period 49 vessels hailed from St. John, measuring 3,390 tons; they traded with Great Britain, United States, Bermuda, Jamaica, and Nova Scotia. During this year a sloop of fifteen tons arrived from Kingston, Jamaica, with a cargo of seventeen puncheons of rum! During the past year (1853) there were *launched* in New-Brunswick 115 vessels, measuring 69,657 tons.

On the 1st January, 1850, the repeal of the British Navigation Laws took effect. This measure was at first coldly received by our ship-owners and builders, but the result has proved the very reverse to that which was anticipated, as the shipping interest well knows, to its profit. Other branches of our staple industry have prospered in a like ratio, and the happy issue of this great measure satisfactorily proves that trade, like thought, will rarely expand when it is controlled by legislative shackles. During the year just named, vessels bearing the flags of several European States entered our harbor for the first time; they came from Norway, Denmark, Sweden, Prussia, Bremen, Hamburg, Mecklenburg, Naples, and Austria. In 1850, a proclamation of the Lieutenant-Governor of the Province manifested itself, under the authority of a provincial enactment, declaring many articles exempted from duty which were the growth or produce of the neighboring British colonies.

In order to show the durable qualities of New-Brunswick-built vessels, I now append a tabular statement, compiled by me over four years ago, and published at the time in the *St. John Courier*, our leading commercial journal. I am aware that you can produce a ship, still in existence, and far older than the oldest one named by me. I refer to the ship Maria, built at New-Bedford, by William Rotch, of Nantucket, in 1782, and now on a whaling voyage; but you will please to bear in mind that New-Brunswick, *in name* at least, had no existence in '82; the country which subsequently constituted the province at this

period was called the county of Sunbury, and was comprehended within the province of Nova Scotia.

List of a few old Ships, built in the Province of New-Brunswick, compiled 1st March, 1850, by Peter Stubs, Notary Public, St. John, N. B.

Vessels' Names.	When built.	By whom built.	When last heard of, &c.
Harmony	1810	John Dow	At St. John, 1848.
Edward Ellice*	1813	Moses Vernon	Do. in 1846.
Friendship	1813	John Dow	Heard of in 1849.
James	1815	James Moran	At Cork 1850.
Waterloo	1815	James Moran	At Hull 1850.
Hero	1823	Owens & Lawton	At London 1849.
Clansman	1824	Owens & Lawton	At Quebec 1849.
Tamerlane	1824	James Moran	Lost in 1846.
Thomas Hanford	1824	W. & J. Olive	At Boston in 1849.
Marchioness of Queensbury	1824	George Thompson	Autumn of 1849.
Joseph Hume	1824	John Humbert	At St. John 1850.
Lady of the Lake	1824	Sam. Bucknam	At do. 1847.
Warrior	1825	J. S. Wetmore	In 1849.
Carleton	1825	Owens & Lawton	In 1847.
Cassandra	1825	Alex. Nevers	In 1849.
Bruce	1825	Isaac Perry	At St. John 1849.
Union V.	1825	D. & T. Vaughan	At Dublin 1848.
Czar	1826	Cripps & Waddington	At Dundee 1850.
Pallas	1829	J. S. Wetmore	At St. John 1849.
Gov. Douglas	1826	John Bateman	Lost in 1847.
Narcissus	1827	Griffith Jenkins	At St. John 1847.
Ambassador	1829	D. & T. Vaughan	At Liverpool 1849.
Frederick	1830	W. & J. Olive	At Hull 1850.
Joanna	1830	John Dow	At St. John 1849.

The Royal Saxon was built by George Thompson, in the vicinity of St. John, in July, 1838, where she was classed A 1, at Lloyd's, for four years; and opened at that period, and again placed on the same letter for four years; at the termination of the second period, she was again placed on the same letter for one year. The R. S., by some species of legerdemain, became an American registered vessel, and sailed out of Baltimore in 1850—but, probably, under another name. The sloop Elizabeth was built at Digby, N. S., in 1821, and was employed by the Provincial Government, for several years, as a Revenue

* The compiler of this table was on board this vessel, at the time belonging to his father, during her first passage across the Atlantic, from St. Andrews to Liverpool. On this occasion she came near being captured by an American privateer, which put out of Machias for that purpose. A northeast snow-storm suddenly springing up, was the lucky means of preventing the achievement.

Cutter. In 1850 she was engaged in the coasting trade of the Island of Jamaica.

Many of the vessels named in the tabular statement above are yet in existence, and performing good service for their respective owners; and many others, that have attained "a green old age," having "braved the breeze" for more than a quarter of a century, can be produced as good and accumulating proofs of the lasting qualities of New-Brunswick ship-timber, and as honorable memorials of the faithful industry of colonial mechanics; but sufficient, I think, has now been shown to subserve these important ends, and by one, too, whose *profession* indifferently qualified him for the task, but who is never more happy than when occupied in promoting the interests of the working-man. When I look upon a fine ship, with all her means and appliances to boot, beautifully, I may say *poetically*, harmonizing with the symmetry of her model, I am wont to exclaim—"Behold the triumph of mechanical philosophy!"

The following is a list of the St. John and Liverpool Line of Packet-Ships, appointed to sail from Liverpool semi-monthly:—

Ship.	Master.	Tons.
Eudocia	Doane	1,015
Middleton	Delany	996
David G. Fleming	Nichols	1,425
John Barbour	Marshall	990
John Bannerman	Robertson	1,131
Joseph Tarratt	Smith	942
Imperial	Moran	1,279
Liberia	Cruikshank	875

The above vessels, all built in New-Brunswick, commenced running on the 1st February, 1853, and have performed their trips with great regularity, always carrying cargoes in both directions. It is a remarkable fact, that although this—"*The Blackball Line*"—has now been established for eighteen months, and has met with unparalleled success, in the attainment of full freights, in every instance of departure, besides being the means of bringing to St. John a vast number of both first and second class passengers, yet during the whole period of its career, the underwriters of the line have in no one instance been called upon for insurance to the amount of a "red cent," and not a single death has occurred among the passengers! This speaks favorably for

Statistics.

List of Vessels built during the years 1852, 1853, *and* 1854, *under "Special Survey" of Lloyds' Officer at the Port of Quebec.*

1852.

	O. M't.	N. M't.	
Countess of Elgin	1047	1204	Baldwin & Dimming.
Haidee	272	201	Pierre Valin.
Ebba Brake	1437	1756	Ditto.
Sabrina	645	672	Ditto.
Eleanor	435	426	Davidson & Gondie.
Caroline	844	989	Theophilus St. Jean.
Montcalm	1021	1132	Thomas C. Lee.
Albinus	504	495	Ditto.
Premier	836	905	Thos. H. Oliver.
Gulmore	1001	1106	Ditto.
Emigrant	879	934	Ditto.
Culloden	863	909	W. G. Russell.
Cameo	686	721	Ditto.
Earl of Elgin	1001	1148	J. Elie Gingras.
Rhea Sylvia	856	881	James E. Oliver.
Sarah and Emma	1163	1195	Ditto.
America	1494	1483	G. H. Parke.
Banker's Daughter	1040	1121	Anthony St. Jean.
Frederick	859	863	Hyppolite Dubord.
Julia	1035	1070	Ditto.
Chester-holme	738	760	Charles Jobin.
Abdalla	887	961	J. J. Nesbitt.

1853.

Hinda	339	300	David Vaughan.
Lady Geneva Bruce	966	1007	Pelchet & Mercier.
Admiral Boxer	1080	1116	Ditto.
Sillery	994	1077	J. J. Nesbitt.
Almora	1248	1238	Ditto.
Saldanah	1256	1562	Ditto.
Boomerang	1540	1823	Theophilus St. Jean
Wymstay	670	527	Ditto.
Volant	500	499	William Cotnam
Norwood	1196	1527	Ditto.
Sapphire	1005	1140	W. G. Russell.
Cairngorm	1025	1161	Ditto.
Persia	1546	2002	W. G. Parke.
Arabia	1106	1022	Ditto.
Bonaventure	1055	1124	John Munn.
Prompt	680	767	Ditto.
Duke of Wellington	1126	1262	J. Elie Gingras.
Northern Light	1141	1283	Ditto.
War Cloud	1199	1250	Ditto.
British Lion	1456	1369	Pierre Valin.
Carpentaria	1472	1460	Ditto.
Fulwood	1204	1215	H. N. Jones.
Glandalough	965	1077	Ditto.
Melbourne	1059	1069	Davidson & Gondie.
Sir Allan McNab	798	840	Hyppolite Dubord.
Stamboul	1244	1274	Ditto.
Willliam Miles	1227	1224	Charles Jobin.
Sheridan Knowles	856	953	Thomas C. Lee.

	O. M't.	N. M't.	
Shooting Star	1518	1362	Charles Jobin.
Arthur the Great	1602	1389	Ditto.
Rock City	749	597	Ditto.
Cap-Rouge	1071	1101	Thomas N. Oliver.
Leicester	803	744	Thomas C. Lee.
James McHenry	1537	1777	James E. Oliver.
Nuggett	1090	1128	Edward Trahan.
Hilton	1293	1440	James E. Oliver.
Annie Jane	1145	1294	Baldwin & Dimming.
Argonaut	1188	1237	Ditto.
Meteor	775	754	Ditto.
Chance	449	479	Ditto.
Daylesford	610	680	George Davie.
Cheviot	1040	1065	W. G. Ray.
Eveline	898	904	John Lemlin, Jun.
	1854.		
Cataragin	645	632	John Counter.
Monica	1407	1363	J. P. Nesbitt.
Nazarene	920	916	Ditto.
Typhoon	1410	1403	Andrew & William Parke.
Danube	986	1103	Ditto.
Chapultepec	979	1084	Julien Labbee & Co.
Eclipse	1348	1305	W. G. Ray.
Ocean Monarch	1869	1831	Baldwin & Dimming.
Captain Cook	1265	1272	Le Blanc & Drolet.
Aliquis	1150	1247	John Munn.
Bucephalus	1336	1196	John Lemlin, Jun.
Kildare	667	901	Ditto.
Agamemnon	739	756	J. Elie Gingras.
Empress Eugenie	1666	1689	Ditto.
Echo	1067	1188	W. G Russell.
Mt. Morenci	812	751	Thomas C. Lee.
Antarctic	820	757	Ditto.
Louis Napoleon	868	743	Ditto.
Ultonia	1340	1398	Edward Trehan.
Jane	685	755	Pierre Valin & Co.
Constantinople	1255	1298	Hyppolite Dubord.
Lancashire Witch	1205	1386	Lomas & Sewall.
Star	174	174	Ditto.
Piednez	630	700	Hyppolite Dubord.
Fanny Forsyth	1490	1497	Thomas H. Oliver.
Napoleon III	1412	1462	Ditto
Florence	1185	1178	Pelchat & Mercier.
Tiger	1058	1102	Pierre Valin & Co.
Moira	810	860	Nelson & Co.
Alliance	520	550	Julien Labbee & Co.
Finchley	536	500	Le Blanc & Drolet.
Tudor	1847	1648	H. N. Jones.
Cariboo	——	1207	Pierre Bunnel & Son.
Empress Eugenie	856	891	Gabriel Valin.
Lord Raglan	1789	2080	Charles Jobin.
Exodus	1127	1237	Theophilus St. Jean.
Czar	1188	1252	Robert McCord.
Silistria	1055	1025	Bidegane & Co.

N. B.—With the above, there are six other large ships ready to launch, and will get away this fall. Nearly every yard has a ship in progress, but will not push them while the prospects at home threaten as just now they do Wages, too, have got *far beyond their fair value*, and this would have stopped ship-building, even though ships were likely to keep up in Liverpool.

NEW-YORK SHIP STOCK MARKET.

In consequence of the depressed state of ship-building, the market is dull, and there is very little demand for the straighter kinds of timber. Large oak knees, however, are in great demand, and the more valuable descriptions of breast-hooks, sharp-rises, and rare crooks, command ready sale.

We quote as follows:—

Flitch timber,	$30 to $35 per cubic foot.
Oak Plank.... Ohio and Canada..	$45 per thousand.
" " Western	$40 " "
Deck plank.... White pine,	$35 " "
Hackmatack timber, per cubic foot..	25 cts.
Chestnut " " " "...	25 cts.
Cedar " " " "...	60 to 75 cts.
Yellow pine logs sawed, by the cargo,..	$30 per thousand.
" " " " at retail,	$35 " "
" " " rough	$30 " "
" " plank, superior	$30 " "
Locust timber, 8 inches square,	$1 12 to $1 25 per cubic foot.
" " 7 " "	$1 " " "
" " 6 " "	75 " " "
Treenail Locust	60 to 75 cts. " " "
Oak knees, 5 inches, at	$3 00 each.
" " 5½ "	4 00 "
" " 6 "	5 00 "
" " 7 "	7 00 "
" " 7½ "	8 50 "
" " 8 "	10 00 "
" " 8½ "	11 00 "
" " 9 "	12 00 "
" " 10 "	15 00 "
" " 11 to 12 inches, at	15 00 to $20 00 each.

Hackmatack knees are held about 10 per cent. lower than oak.

FREIGHTS.

BY SAILING VESSELS.		STERLING.				
TO LIVERPOOL.		*s.*	*d.*		*s.*	*d.*
Tobacco	hhds	15	—	to	—	—
Cotton, square bales	per lb	—	⅛	to	—	—
Flour	per bbl	—	—	to	—	—
Rosin		—	10	to	1	—
Heavy Goods	per ton	12	6	to	15	—
Grain, ships' bags	per bus	—	4	to	—	4¾
Beef	per tce	—	—	to	—	—
TO LONDON.						
Tobacco	per hhd	20	—	to	22	6
Flour	per bbl	—	—	to	—	—

		s.	d.		s.	d.
Rosin and Turpentine	per 280 lb	2	6	to	—	—
Measurement Goods	per ton	12	—	to	15	—
Heavy Goods, Oil, &c.		17	6	to	20	—
Beef	per tce	—	—	to	4	6
Oil Cake	per ton	15	—	to	—	—
Grain	per bush	—	—	to	—	—
TO HAVRE.						
Cotton, square bales	per lb	—	—	to	—	¼c
Ashes	per ton	$5	—	to	$6	—
Rice		—	—	to	—	—
Quercitron Bark		—	—	to	—	—
Measurement Goods		$5	—	to	$6	—
Whalebone, &c.	per lb	—	⅜c	to	—	—
Flour	per bbl	—	—	to	—	—
Grain	per bush	—	10c	to	—	—
TO SAN FRANCISCO.—BY CLIPPERS.						
Measurement Goods	per foot	—	25c	to	—	30c
Heavy Goosd	per ton	$15	—	to	$20	—
Coal		15	—	to	16	—

From Messrs. Hiscox & De Voe, we obtain the following list of dealers' prices for Floors, Futtocks, and Stem-pieces, in New-York, Oct. 28, 1854.

8 to 9 inch ship timber.

A set of floors, complete, 9 to 16 ft. long, and 15 to 18 inches moulded at the breech, and from 16 to 42 inches crook	$6 00 each
A set of futtocks, complete, for above	2 50 each
Single floors, according to crook	$6 to $8 and $10 to $12 00 each
Single futtocks, if selected	5 00 each

9 to 10 inch ship timber.

A set of floors, complete, 10 to 18 ft. long, and 16 to 18 inches moulded at the breech, and from 15 to 50 inches crook	$9 00 each
A set of futtocks, complete, for above	3 50 each

10 to 11 inch ship timber.

A set of floors, complete, 10 to 21 ft. long, and 20 to 22 inches moulded at the breech, and from 16 to 48 inches crook	$15 00 each
A complete set of futtocks for frame	6 00 each

11 to 12 inch ship timber.

A set of floors, complete, 12 to 24 ft. long, and 22 to 24 inches moulded at the breech, and from 16 to 60 inches crook	$15 to $20 00 each
A single floor, 12 to 14 ft. long, sided 11 inches, with 50 to 60 inches crook, moulded 24 inches at the breech, and 17 inches at the ends	$30 00
A complete set of futtocks for above	8 00 each
Stem pieces 18 to 20 ft. long, side 13 and 14 inches	$20 to $25
Stem pieces 20 to 24 ft. long, side 15 and 16 inches	$30 to $45
Stem pieces 24 to 30 ft. long, side 17 and 18 inches	$60 to $70

BOSTON SHIP STOCK MARKET.

October 21*st*, 1854.

SOUTHERN HARD PINE.

The market is rather depressed at this time, in consequence of the poor encouragement for ship-building, for which purpose it is mostly used.

Re-sawed ship stuff	$29 to $31
Sawed "	27 to 28
Floor boards	25 to 26
Hewn timber of large sizes	28 to 32
" of small sizes	22 to 24

The demand for Oak timber is very limited, in consequence of the few contracts in the market for ships. The demand for Oak planks has not kept pace with the business of ship-building, since hard pine has come into such universal use for this purpose. Nearly all the ships built in Boston the past year have been planked with hard pine.

Oak timber, rough moulded, by the cargo, $16 per ton.
Oak plank, No. 2, $40, No. 1, $50 per m.
Maple keel pieces, from $14 to $18 per ton.
Hackmatack knees, 8 inches average, 50 cts. per inch.
" timber to side 10 inches, $9 per ton.
White pine deck plank, Nos. 1 and 2, $35 per m.

PRICES PAID FOR OAK KNEES AT THE GOSPORT NAVY YARD.

Knees, sided 7 inches,	body 5 to 7 ft. long,	arm 4½ to 5 ft. long,	..	$6 30 each
" " 8 "	" 5 to 7 ft.	" " 4½ to 5 ft. "	..	8 00 each
" " 9 "	" 5½ to 7½ ft.	" " 5 to 5½ ft. "	..	11 25 each
" " 10 "	" 6 to 7½ ft.	" " 5 to 5¾ ft. "	..	14 00 each
" " 11 "	" 6½ to 8 ft.	" " 5½ to 6 ft. "	..	16 50 each
" " 12 "	" 6½ to 8 ft.	" " 5½ to 6 ft. "	..	21 00 each

In consequence of the great length of arm, a requirement as impracticable as arbitrary, very few knees have been offered for these prices during the past year.

SHIPPING LAUNCHED IN NEW-YORK DURING THE MONTH OF OCTOBER.

By *John English*, October 3d, the steamship Joseph Whitney, 200 feet long, 32½ feet beam, 16½ feet hold, 1,000 tons. Owned in Boston. Designed for a packet to Baltimore.

By *William Perrine*, October 23d, the packet ship Johannisberg, 182 feet keel, 36½ feet beam, 24 feet hold, 1,100 tons. Owned by *Captain Sagory*. Built for New-Orleans and Havre trade.

By *Roosevelt & Joyce*, October 14, the ship Monarch of the Sea, 215 feet on the keel, 46 feet beam, and 29 feet hold. Designed for the Liverpool trade.

By *Sneeden & Whitlock*, October 19, steamer Prompt, 150 feet long, of 500 tons. Built for A. A. Low & Co., for the Canton service in China.

By *Thomas Stack*, the clipper ship White Squall, burned last winter, rebuilt into a three-masted schooner, square rigged forward, for the Canton trade, tonnage now about 850. This will be the largest vessel with fore and aft canvas yet fitted for distant voyages, though schooners of over 500 tons are now engaged in the same trade.

By *Wm. H. Webb*, the freighting ship Aurora, 1,700 tons, for the Liverpool trade. Owned by Cornelius Grinnell.

From the foot of North Twelfth-street, Williamsburgh, October 24th, a Balance Dock, of very large dimensions, a full and complete description of which will appear in our next.

By *Eckford Webb*, the bark ———, 115 feet long, 28 feet beam, 12¼ feet hold, tonnage 375. For Moses Taylor & Co. Designed for the Havana trade.

LAUNCHES IN THE UNITED STATES FOR THE PAST MONTH.

On the 5th inst., from the ship-yard of Charles Mallory, Esq., Mystic Bridge, Conn., a beautifully modelled barque of 600 tons, called the Ann, intended for Eagle & Hazard's line of Southern packets, and commanded by Capt. Samuel Cobb, formerly of the packet ship Jessore.

At Yarmouth, Me., recently, a ship of about 600 tons, called the Ben Bolt.

At Newburyport, 4th instant, a ship of 1,000 tons, called the Gleaner.

At Bluehill, recently, a copper-fastened brig of 250 tons, called the Trade Winds.

At Fairhaven, 7th inst., a ship of 1,445 tons, called the John Milton. She is the largest vessel ever launched into Acushnet River.

At Warren, R. I., 6th inst., a medium clipper ship of about 950 tons, called the Mary Ogden, owned by Messrs. Bulkley & Co., New-York, and intended for a freighter.

At Newburyport, 23d September, a barque of 250 tons, called the Golden Rule.

September 26th, at Chelsea, ship Shakespeare, of about 1,800 tons, intended for a freighter.

At Fell's Point, Baltimore, a clipper ship 2,000 tons burden. She is a regular three-decker, and is designed for the Australia and East India trade. She has been named the Napier, after the Admiral of the British navy.

At Cumberland, 23d inst., a barque of 500 tons, called the Pointer.

At Machias, 8th instant, a brig 339 tons, called the State of Maine. She is intended for the West India trade.

At Biddeford, 22d inst., a ship of 650 to 700 tons. She is to bear the name of Pepperell.

At Philadelphia, 27th inst., a ship, 950 tons burden, called the William Chamberlain. She is to be employed in the general freighting business.

At Portsmouth, 26th inst., a fine ship of —— tons, called the Ocean Rover.

At Bath, 21st inst, a barque of about 600 tons, called the Gen. Cobb.

The clipper ship recently launched at Harpwell has been named the Celestial Breeze.

At Steuben, Me., 8th inst., a schooner of 140 tons, called the Canovia.

At Mystic Bridge, Conn., 7th inst., a three-deck freighting ship of 1,500 tons. She was built for J. H. Brower & Co., of this city, and is named Harvey Birch.

At Kennebunkport, 9th inst., a medium clipper ship of about 1,170 tons, called the Ina Russell.

At Wiscasset, 7th inst., a ship of 1,200 tons, called the Golden Horn, intended for the general freighting business. Same time and place, a full freighting ship of 700 tons, called the Wabamo.

At Alna, 5th instant, a ship of 500 tons, name, &c., not given.

At Freeport, Me., 7th inst., a ship of about 1,400 tons, the largest ever built at that place. Same day, a barque of about 300 tons.

The barque launched at Boothbay, 21st inst., is now said to be 400 tons, and to be called the Archer. Her owners are Messrs. Sargent and White, (the builders,) William Williams and Captain Russell Lewis, who will command her.

At Bath, 26th inst., by Messrs. Cox & Bros., a brig of 275 tons.

At East Boston, Oct. 4, by Mr. Donald McKay, a barque of about 600 tons, called the Benin, owned by Mr. Harrison, of Liverpool, and intended to trade between that port and the west coast of Africa, to be commanded by Captain Wheeler.

The ship Free Trade, 1,200 tons, belonging to R. P. Buck & Co., of New-York, was to be launched from the yard of Messrs. Currier and Townsend, Newburyport, 3d inst.

A ship of about 800 tons burden, named James Guthrie, in honor of the present Secretary of the Treasury, was launched on Thursday last, at Norfolk, Va.

At Thomastown, 9th inst., a ship of 1,400 tons, named the Sebastian Cabot.

At Warren, Me., 7th instant, a ship of about 1,000 tons, named the Crest of the Wave. Also, a ship of 1,000 tons.

At Trescott, Me., 7th inst., a ship of 700 tons, called the Know-Nothing. She is designed for the general freighting business.

At Bath, 11th instant, a ship of 1,000 tons, called the William M. Rogers.

At Camden, 7th inst., a ship of 810 tons, called the Borodino.

At Port Richmond, Pa., by Mr. James House, recently, a clipper barque of 400 tons, called the Charles B. Truitt, owned by Messrs. Heron and Mason, and intended for their line of Philadelphia and New-Orleans packets.

At Boothbay, 21st inst., from the yard of Sargent and White, a superior clipper barque, of about 500 tons, intended for a freighter, and to be commanded by Captain Lewis.

At Brewer, Maine, 12th instant, a schooner of 100 tons, called the Flying Cloud. She is intended for a Boston and Bangor packet.

At Bucksport, 7th inst., a ship of about 1,000 tons, called the Joseph R. Folsom.

At South Prospect, 6th instant, by Mr. N. J. Hichborn, a superior copper-fastened brig of 260 tons, called the Leonard Berry, to be commanded by Capt. Wm. Berry.

New schooner Ocean Bird, whose launch has been reported, arrived at Providence 16th instant, from Patchogue, L. I. She was built by Mr. Hiram Girard, of that place, in the most substantial manner, and is intended as a regular packet between Providence and Baltimore, in Adams' line, under the command of Capt. Gardner C. Gibbs, of the former city.

The fine ship Weymouth, of 1,350 tons, was launched from the yard of the Messrs. Boole, at Jeffries' Point, East Boston.

At New London, 28th ult., by Mr. William Miller, a beautiful clipper barque, of about 400 tons, called the Yankee. She was built by Captain James Smith, who is to command her, and will be employed in the Pacific trade.

At same place, recently, by Messrs. Beckwith, a fine schooner of about 200 tons, called the Sea Ranger, owned by Messrs. A. F. and C. Prentiss, and Captain John Chapman, who will command her.

At Addison, Me., 22d ult., by Messrs. William Nash and Sons, a superior brig of about 260 tons, called the Martha Kendall, owned by the builders, Capt. P. Plumber, who is to command her, and parties in Boston, and intended for the Southern trade.

At Black Rock, Conn., 27th ult., a barque of 550 tons, called the E. Sherwood, intended for a New-York and Mobile packet, to be commanded by Capt. S. B. Hall.

At Newburyport, Oct. 4, by Mr. John Currier, a beautiful ship of 1,000 tons, called the Gleaner, owned by Micajah Lunt, Esq., and the builder, and to be commanded by Captain Micajah Lunt, Jr.

At East Boston, 4th instant, a barque of 600 tons, called the Benin, of Liverpool, and intended to trade between that port and the coast of Africa.

LIST OF PATENT CLAIMS

IN MARINE ARCHITECTURE AND ENGINEERING,

Issued from the United States Patent Office for the Month of Sept., 1854.

Reefing and Furling the Topsails from the Deck.—W. H. Foster, of Portsmouth, N. H.: I claim the arrangement of the Jack stay and batten with the main and minor reefing lines, furling or spilling lines, the lines for manœuvring the dog's ears, with the necessary sheaves and blocks, whereby the square sails of a vessel may be reefed and furled by the lowering of the yard from the deck of the vessel, as set forth.

Machinery for Worming Rigging.—J. C. Ginn, of South Thomaston, Me.: I claim the combination and arrangement of the helical traveller, the box or tubular frame and the bobbins or eels, the whole being constructed as described, and composing a hand machine for the purpose specified.

Surface Condensers for Marine Engines.—Daniel Carpenter, of Brooklyn, N. Y.: I am aware that a perforated guard plate has been used in combination with the ends of the tubes of a surface condenser to distribute the steam entering the tubes; and that a perforated plate has also been placed at the side of a congeries of tubes, to distribute and subdivide the water passing to the outside of the tubes to effect the condensation of the steam inside of them; but in neither case was the plate used for the purpose, and under a combination and arrangement like that which I claim to have invented; and therefore I do not wish to be understood as making claim broadly to the use of a perforated plate in combination with the tubes of a surface condenser.

I am also aware that one series of tubes bent in the form of the letter U have been clamped together by two clamp bars, for heaters or evaporators of liquids, and therefore I do not wish to be understood as making claim broadly to the use of clamp plates for clamping tubes; but I am not aware

that several series of tubes have been bound together by outside clamps, and interposed grooved bars to bind all the tubes together in all directions, under an arrangement and combination such as specified.

I claim, in a surface condenser, in which the steam to be condensed is made to pass outside of the tubes, putting the tubes close together by making the two ends of the tubes which pass through holes in the tube sheet of a smaller diameter than the body of the tubes, and securing them in place by means of nuts tapped on to the ends thus reduced, as specified.

I also claim, in combination with a congeries, or set of tubes, arranged as described, to constitute a surface condenser, which effects the condensation of the steam outside of the said tubes, a guard plate or plates, with apertures, as described, and between the exhaust port or inlet for the steam, and the side or sides of the set of tubes, as described, and for the purpose of protecting the tubes from the violent concussions of the steam when entering, as set forth.

And I also claim as a means of resisting shocks and preventing the vibration of the tubes of a condenser constructed and operating as desribed, the employment, in combination, of the outside clamp bars and interposed bars grooved to embrace the tubes, so that when bound together they shall be firmly held to resist all lateral motion or vibration, whilst at the same time the clamps and interposed bars will further act as diaphragms to direct the steam across the set of tubes, as described.

Oscillating Engines.—William Craig, of New-York City: I claim the steam pipe or valve operated by means of the eccentric rod for obtaining a double action in combination with the follower and trunnion of an oscillating steam engine for the purpose of admitting steam into the face of the trunnion, without regard to the size of parts, substantially in mode of construction of the said parts and application thereof, as described.

I also claim the mode of arranging the eduction and induction ports without regard to size, as set forth.

Ventilating Ship-Timbers.—Joseph L. Harley and Samuel Maxwell, of Baltimore, Md.: We claim constructing a ventilator for ships' frames, consisting of the tube and cap fitting thereon, sustained by means of the double acting spring on the stem, by which the cap is kept open or securely closed when down, as set forth.

Apparatus for determining the Weight of Cargoes in Vessels.—Ephraim Morris, of South Bergen, N. J.: first, I claim determining the level of the water and the consequent weight of the cargo, by means of a plunger, hollow rod, glass tube, and bulb, applied to the tube containing the water, as specified.

Second, I claim the adjustable socket with an index marked thereon, in combination with the hollow rod and plunger, whereby the apparatus is adapted to different boats of the same size or to the same boat under various circumstances, as specified.

Steam Engines.—William Black, of Alleghany, Pa.: I do not claim forcing unmixed water into a highly heated cylinder. Nor do I claim reheating and re-densifying steam that has been used in one cylinder to expand and use it in another cylinder of larger size, as this is set forth in a patent granted to James Frost in 1841.

Nor do I claim having discovered a new principle in super-heating steam apart from water, such as is set forth in application for a patent by James Frost, in 1845.

Nor do I claim the discovery of a mode of creating power by superheating steam as it passes between two engines, one low and one high pressure.

Nor to have invented a mode of using the spent or free steam for cooling or warming water, as set forth in an application for a patent by Jas. Frost, in 1849.

Nor do I claim using highly heated air as a motor or for generating steam by passing highly heated air through water as it falls from one shelf to another; such was done by De Rosen, and is described in Newton's London Journal, vol. 1, 2d ed., page 156.

But I claim mixing, by means of a revolving brush, or some other mechanical equivalent, small drops or particles of water in the steam, as set forth.

Also, the immersing the ramming chambers or pumps in water or its equivalent, for the purpose of chilling the saturated steam suddenly, and just before it is forced into the heated cylinder, as set forth.

Also, the ramming or forcing the highly saturated steam into the heated cylinders, as set forth.

Air Engines.—James R. Napier, of Glasgow, and Wm. J. M. Rankine, of the Parish of Govan, Great Britain. Patented in England, June 9, 1853: We make no claim to any of the mechanical parts separately.

But we claim as the improvements which constitute the peculiarity of the engine, in the first place, the invention and adaptation of what we have called a heat screen, the form of which may be varied, and the means of giving motion thereto may also be varied, the said heat screen being separate and distinct from the plunger, which drives the air or other gas from the hot to the cold end of the receiver, and vice versa, and being adapted to the following purposes:—

First, to screen the principal portions of the air or other gas from the communication of heat from the furnace or source of heat at those times when that heat would impede the motion of the engine; that is to say, when the air or other gas is being passed towards the cold end of the receiver to be cooled when it is not being expanded, and when it is being compressed.

Second, to receive and store up in its own material at such times the heat communicated from the furnace.

Third, to permit and accelerate the communication of heat to the air or other gas at the time when it is most effective in developing mechanical power, that is to say, when the air or other gas is being expanded.

In the second place, we claim the adaptation of tubular receivers for the purpose of heating or cooling the air or other gas in the manner described, that is to say, by the aid of rod-shaped heat screens or plungers nearly filling the tubes, and serving by being moved out and in, whether by the mechanism shown or by any other suitable mechanism, to admit and expel the air or other gas, and promote its circulation over the heated or cooled surface.

We do not, however, claim the invention of tubes as a means of increasing heat-conducting surface, but simply the adaptation of tubes to engines worked by the action of heat on air or other gas, by the aid of the rod-shaped heat screens or plungers described.

Construction of Ships.—John W. Griffiths, of New-York City: I claim the method of increasing the strength of ships by vertical plates of iron, extending up vertically from the keelson or dead-wood, to one or more decks, and secured to the keelson and deck, and extending the whole length of the ship, substantially as described.

And I also claim giving additional strength to ships by means of longitudinal bulkheads of plate iron, and interposed between the centre keelson and side timbers to the deck, and secured to them, whether made water-tight or of open lattice-work, substantially as specified.

TO THE PRESS AND OUR PATRONS.

We are under many obligations to our brethren of the press for the welcome reception which we have met at their hands, and have taken occasion to present our patrons with a few of the many flattering notices which have reached us in abundant profusion since our "Trial Trip." It will scarcely be expected that our new machinery will at first prove perfect in all its parts, but will be susceptible of improvement upon each succeeding voyage. In the present number we have brought the work up to 80 pages —a size we hope to be able to sustain. We have also furnished lists of Disasters at Sea, Shipping Launched, Price Current of Ship Stock, &c., for the past month.

This, and other information, it will be our province to complete in future numbers, until all that can be desirable in these important particulars shall find a reliable record in our pages.

Correspondents and Contributors will please bear in mind, that to secure an insertion for their articles, it will be highly necessary to send them in at an early date in the preceding month.

We have received many spirited and cheering letters from correspondents, congratulating us upon the appearance of a periodical devoted to the maritime interests of our common country, and also promising hearty co-operation in all the objects of our noble enterprise. We are, indeed, highly gratified to receive such unqualified assurances of their approbation, and have only to rejoin, that the magnitude and grandeur of our voyage on the tempestuous waves of journalism will correspond to the propelling power which shall be furnished by the commercial fraternity of the United States.

The Nautical Magazine will be published on the first of each month, and will be kept on sale for subscription by the following agents :—

New-York,	At the Office of the Magazine, 79 John-st.
Boston, (and the East)	Joel Knight.
Baltimore	Henry Taylor.
Buffalo	T. S. Hawks.
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Changes.—The agency of J. N. Frentzel is discontinued.

Francis Brown, of Brooklyn, is no longer authorized to canvass for the *Nautical Magazine.*

THE

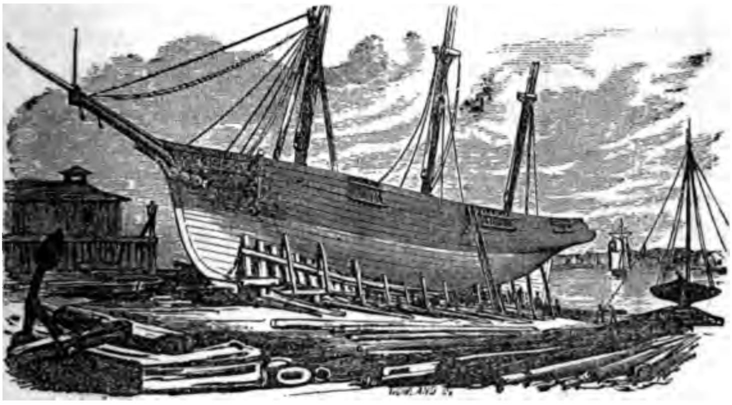
Monthly Nautical Magazine

AND

QUARTERLY COMMERCIAL REVIEW.

VOL. I.] DECEMBER, 1854. [No. 3.

Mechanical Department.



TONNAGE.—No. III.

BUT it may be that the question of security to human life being consequent upon principal dimensions, is yet problematic with some. To such we would say, that upon the principal dimensions of a vessel depends her stability, inasmuch as the centre of gravity takes its position from the distribution of weight, so the index of stability takes a determinate locality from the amount of buoyancy distributed in the sides or bottom of the vessel. If the vessel has a large bottom or great breadth, the vertical or upward pressure is proportionately great; while, on the other hand, if the vessel be deep, with less breadth, the sides

receive a corresponding amount of horizontal, and, as a consequence, less vertical pressure; hence we find narrow vessels requiring ballast to enable them to maintain an upright position, while the better proportioned vessel is secure with an empty hold. But that this subject may be still more clear, we will exhibit another of its features from the same stand-point. Stability is seldom divided, as it should always be, under two distinct heads, theoretical and practical; the former is more particularly consequent upon the depth of the vessel, and is the result of mathematical investigation, while the latter is not thus determinate, but is the resultant of shape. A vessel may possess a large share of stability when in a state of rest, or when in port, and yet be a most unstable vessel at sea, without having undergone the slightest change in the amount of displacement, or in the distribution of her cargo. Such conditions are often the resultant of an effort to evade the provisions of the tonnage law, and whenever or wherever found, they are the index of deformity in shape. The conditions of this want of stability at sea arise from a contraction of breadth at the longitudinal centre, and an expansion of breadth at the extremities; hence it will appear obvious, that while an effort is made to increase the capacity at the ends of the vessel, where no measurement for tonnage is taken, the suspending or buoyant power is increased in like ratio, and when the end of the vessel is submerged in the wave, the buoyancy is diminished at the sides of the vessel, amidships, inasmuch as a determinate displacement, equal to the entire weight of the vessel, must be maintained at all times; hence, a redundancy of buoyancy at the ends of a vessel brings the axis at the stem and post, or at the bow and stern, while that part of the vessel where the bulk of cargo is stored has a depressed line of flotation, which has both a tendency to strain the vessel and cause her to roll. It must, we think, be quite clear to every mind, that while the sides of the vessel are supported by increased breadth, with a corresponding decrease at the extremities, the vessel will be both theoretically and practically more stable, and consequently less liable to disaster; for it must be a conceded truth that the smallest amount of divergence from the line of her course by a vessel at sea furnishes the

greatest amount of security, both for life and comfort, on shipboard. The miseries of sea-sickness, the dread of ocean travel, is consequent, to a very great extent, upon the deformity of shape, having its origin in a want of breadth amidships; nor would this discrepancy in shape have remained to the present time but for this incongruous and dangerous law. It is, however, a singular fact, that while the advocates of narrow *ships* contend that stability is the result of a moderate degree of breadth, they are careful to maintain even more than a *just proportion* in single-decked vessels, the reason for which must be fully appreciated, when it is remembered that there is less room for evading the law of measurement in vessels of this character; and yet we find those single-decked vessels sailing on the same ocean, engaged in the same trade, and built often of the same capacity as those of two decks, in which the limited breadth was maintained. No one having a reputation for being in possession of any considerable amount of experience in nautical pursuits would put the same in jeopardy by announcing our coasting vessels to be disproportioned in consequence of a redundancy of breadth; and it is by no means an unwarrantable assumption to set down the loss both of life and property in double-decked vessels as being far greater than in those of unstinted breadth, in proportion to the amount of investment in each kind of vessel. It may be said that double-decked vessels are sea-going, while those of the single-decked order are engaged in inland and sea-coast navigation. To this rejoinder we reply, that of the whole navigation within the orbit of civilization, that of our sea-coast is the most dangerous, as very many of our double-decked vessels have abundantly proved, to the entire satisfaction of both owners and underwriters. The dangerous shoals bounding the Atlantic States, stretching far out seaward from the shores, renders our sea-coast navigation a great theatre for the display of maritime skill, and being comparatively free from embarrassing laws, furnishes at once an exponent of the genius of American commerce. But there are other reasons why narrow vessels are the bane of travel by sea: possessing as they do a limited amount of natural stability, they are wholly dependent upon the forced depression of the centre of gravity below the meta-centre,

or the representative point of the upright sustaining forces; hence they are ever subject to those heavy lurches which sometimes cause a change of position in the cargo, from which an escape with the loss of spars is regarded as a signal deliverance. In connection with the long list of disasters, we sometimes, in nautical parlance, hear of a *tender* ship, but few comprehend its full import. With no natural stability, and a cargo of light material, the centre of gravity of which necessarily seeks an elevated position, they cannot carry sail, even though the perils of a lee-shore on an iron-bound coast were the consequence. But again, should a leak be discovered in the hold, or any other contingency arise, the cargo cannot be removed, inasmuch as the upright position of the ship would be at once jeopardized. It is, indeed, a fortunate circumstance that the American exports are of such variety that *tender* ships may carry cotton between decks eastward, and return with emigrant passengers westward. The public mind has been so long accustomed to hear of disasters at sea, that popular sentiment has settled down quite at rest in relation to that important clause found in all bills of lading, viz., *the dangers of the seas only excepted,* as though the fearfully long list of disasters were unavoidable, it being a contingency inseparably connected with navigating the ocean. It has, perhaps, never occurred to the merchant, or the underwriter, that it is at all probable that some of those vessels which clear from our custom-houses, and leave our shores for the last time, never to be heard of again, were of this tender class. Such is the fact. However unwilling we may be to cherish the thought, it is perhaps well enough to endeavor to satisfy ourselves that a fearful collision with another vessel, or with an iceberg, has sealed the doom of death to both passengers and crew, the most, if not all of them; but we say that if the light of science and experience are of the least value to the commercial world, we may learn that the existing tonnage laws are either directly or remotely the fruitful source of more shipwreck than every other cause. It were better to expunge all law in reference to the measurement of vessels from our statute-books than to dam up the streams of intelligence, and by the glare of a false light, decoy the unwary merchant and

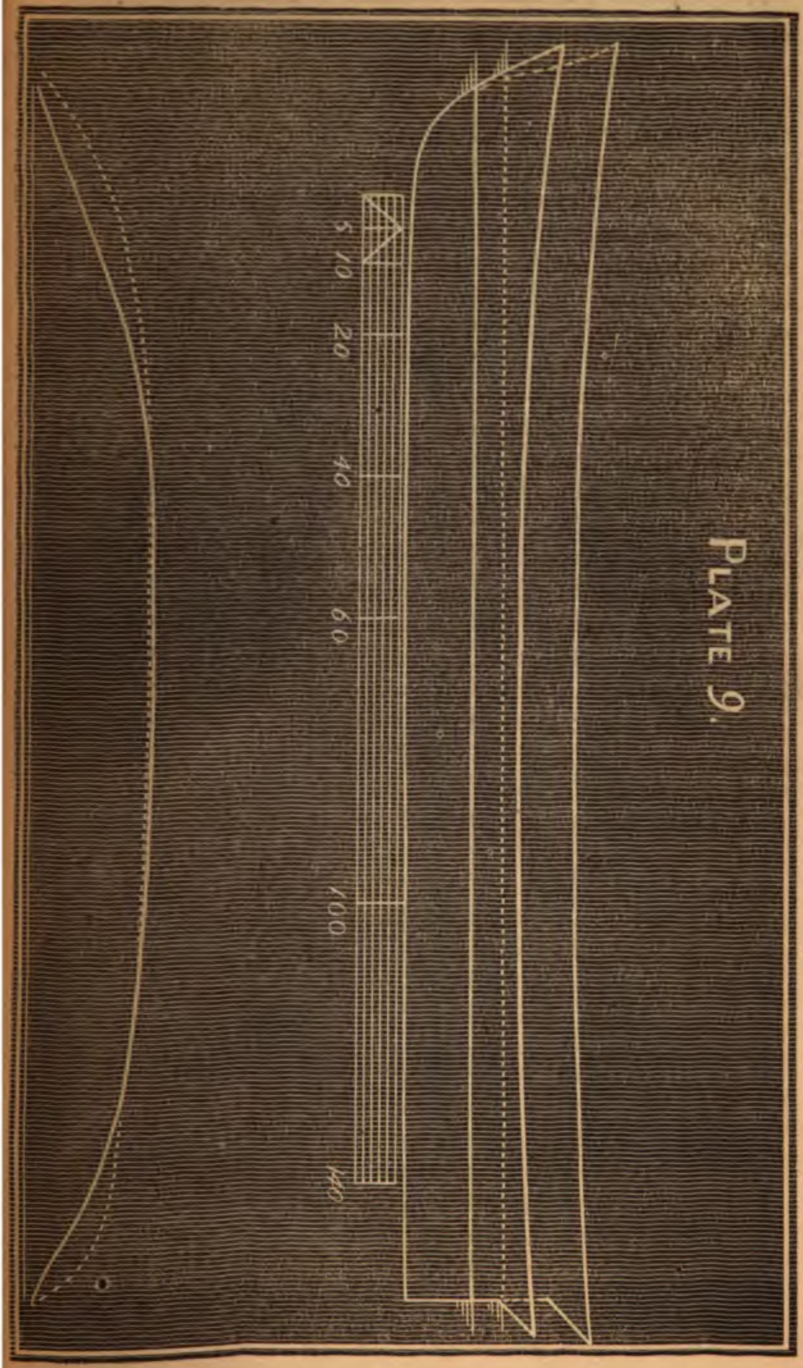


PLATE 9.
5 10 20 40 60 100 140

mariner into a strait where the difficulties render his escape hazardous. We may heap amendment upon amendment, Congress may enact laws in reference to life-boats, life-preservers, and the inspection of steam-boilers, and whatever else may seem good, but unless they make an incision into the laws for measuring vessels, and allow its poisonous provisions to escape, little good will be accomplished; on the other hand, if they shall strike at the root of the matter, and enact a law that shall make the vessel *herself a life-boat*, they will have secured the blessings of unborn millions, who will compare the past ratio of disasters with those of the future. In order that a more definite understanding of its operations may be had, we exhibit in the accompanying engraving a general outline of the same vessel, with single and with double deck: this will be of service to the merchant, and may enable him, by due observation, to learn that his true interest is more deeply involved in this matter than he had supposed. We have in the engraving, Plate 9, the sheer and half-breadth plans of two vessels of about equal length, 169 feet, one 36 feet wide, by 11½ feet hold, single-decked, and the other 35 feet wide, with 19½ feet hold, double decked. A medium load-line of flotation is set down for each vessel, very nearly approximating the truth: these, it will be borne in mind, are the proportions now in general use in full double-decked freighting vessels; the same in reference to the proportions of the single-decked may also be said. It will be seen that the additional weight of the upper deck must be sustained upon a smaller bottom; as a consequence, not only a greater altitude for the load-line of flotation must be assumed to compensate this additional weight, but also that of the ballast rendered necessary by the inequality of weight above the centre of gravity of displacement; hence we see that the space between the full and the dotted line of flotation, represented in the sheer plan of Plate 9, is not for cargo, but for the weight of the vessel and ballast. If this, however, were the whole story, it would be a question of dollars, and the merchant would soon learn that large topsides for a vessel of small bottom was unprofitable; but while the government recognizes a false balance for the measurement of vessels, the confiding passenger, under its protection, too often

finds the vessel a winding-sheet, instead of a safe conveyance. Instability is the bane of navigation, whether seaward or inland, and we would be understood as applying the term in reference to longitudinal as well as transverse motion, to steam as well as sailing vessels.

(*To be continued.*)

MARINE AND NAVAL ARCHITECTURE OF THE CRYSTAL PALACE.

In continuing the sketch of our impressions of a visit to the Nautical Courts of the great Exhibition, we will examine a steam frigate by a naval constructor—length, 310 feet; breadth, 50 feet; depth, 30 feet—in contrast with the clipper steaming ships already described. This frigate has a great draught of water in combination with a flat floor, hard bilge, wall side, heavy stern, and a warlike bow, but is undoubtedly as great an improvement on our present models of war steamers in service, as the most sanguine could expect to see adopted under ordinary circumstances, and the present system of the Bureau of Construction. If we are to have a superior description of war ship in the six steam frigates now in course of construction, it is because the department has for once made an extraordinary effort for improvement, in keeping with the spirit of the age. The model is neatly made.

In comparing the altitude of naval with marine science, as exhibited in the models before us, we would by no means depreciate the meritorious efforts of those constructors who have labored in vain to introduce the spirit of commercial enterprise into naval designs. The very spirit, if not the letter, of naval establishments, forbids the freedom of the modeller's hand: the roseate glow of genius fades away in the prison-going atmosphere of navy-yards, where a commission of naval officers sit in grave inquisition to analyze the constructor's model, with nothing better than the feudal prerogative of *naval supremacy* for a *parabolic mirror!* How can men be qualified to reject or approve the highest achievements in *naval design* who have never made a superior model, proved to be such at sea, and would

even fail at a barbarous attempt to whittle out a barge? As well might the clown undertake to adjust the movements of the *poet's eye*, "in fine frenzy rolling."

We find no models of lake or river steamboats on exhibition; and though there are here various representations of something like marine architecture, designed, no doubt, for display in the show-windows of toy-shops, but mistaken by the directors of the Crystal Palace for objects of study for men, instead of boys, it will be out of our province to give this class of playthings a place among our notes.

Among the models of clipper-ships, a mechanic of New-York exhibits one called the "Whirlwind," of medium sharpness, and very good dimensions, viz., 200 feet long, 40 feet wide, and 22 feet deep. It does not differ from the stereotyped form, as influenced by the dimensions, and displays no originality, but is, however, a very fair model.

Two clipper-ship models by another hand give evidence of their maker's ambition to split wind and wave, but lack good proportions and symmetry, and are afflicted with sameness of shape above water. Their motions at sea will be uneasy, owing to abrupt changes of shape at the extremities of the bottom. But we are admonished that, without the calculations of these models, it is impossible, from a bare inspection by the eye, to define any tangible comparisons of shape, or present an imperfect analysis of their qualities, in a written exposition to the general reader. For this reason, we cannot undertake to delineate more than our own impressions.

The *original* labors of Wm. A. Lillie are conspicuously embodied in a model claiming the "Clipper" title, in which the sectional planes are disposed diagonally, instead of horizontally, as in common working models. As he claims to have made a discovery, it is gratifying to find an appended "Explanation," in large letters, giving a synopsis of its singular origin and utility, which runs as follows:—

"The diversity of opinion that exists among ship-builders with regard to the proper shape of the lines upon which a ship should be built to insure the best combination of sea-going qualities, buoyancy and speed, having for some time engaged my attention,—one party arguing that round, or, at

the utmost, straight water-lines, offered the least resistance to the passage of a ship through the water, and that hollow water-lines, either fore or aft, had a tendency to increase the resistance, while at the same time they diminished capacity for stowage, and buoyancy of the ship ;—another party arguing that all their experience tended to prove, that ships built upon water-lines, hollow to a certain extent, invariably bore excellent characters both for speed and as sea-boats : and as both parties bring the most conclusive arguments forward in support of their respective opinions, I came to the conclusion that there must be some mistake in the theory that the water passes along a ship's side and bottom in a direction parallel with the surface ; and after some experiments, the nature of which it is not necessary to explain, I found that the water, instead of passing along a ship's side and bottom in a direction parallel with the surface, passed in the direction shown by the lines on the model—the stem being a common centre from which the water radiates (at any given point) in the direction of the shortest horizontal distance from the centre of the ship, and closing in the rear or after body of the ship in a similar manner. Hence, my theory that a ship or steamer built upon the principle shown by the model would insure the best combination of buoyancy and speed which can be obtained. The principle can be applied to the fullest packet-ship or the sharpest clipper with equal success, and would, in my opinion, be peculiarly applicable to steamers, from the fact of their always being, as it is technically called, trimmed upon an even keel—the position of the vessels on which my experiments were made."

Having thus assumed the discovery of a new principle in modelling as the joint result of an ingenious investigation, not only of two conflicting *theories* of resistance, but also of the *laws* of fluids in motion around the sides and bottom of a ship, he evidently flatters himself that something handsome has at last been accomplished for perfecting the shapes of ships. Alas for the confusion of common sense ! "The diversity of opinion that exists among ship-builders" is in nowise displaced by the alleged discovery of *another method* of putting models together; for we are assured by Mr. Lillie that his theory "can be applied to the fullest packet-ship or the sharpest clipper with equal success ;" and the "conclusive" logic of mechanical disputants is in nowise shaken, since we are assured that each "party"—"round water-line," and "hollow water-line"—can be free to secure his favorite model through the wonderful instrumentality of the *new principle*. This is, indeed, an astonishing piece of information, that a modeller can obtain whatever shape he pleases, notwith-

standing his block of wood is put together in a diagonal manner! An apprentice might infer as much, if it was put together in a vertical manner, to show section-lines, or was made of a single piece, or block.

The world of fancy water-"line"-ers need not, therefore, be startled in apprehension of any dangerous innovation in modelling from substituting "diagonal" for horizontal planes. In evidence of this, the inventor (?) has furnished unmistakable proofs in the model before us, which, if made to show "water-lines" instead of diagonals, would disclose the very same shape in rotundity, and exhibit no originality in dimensions or form.

The architect who is acquainted with the history of the model in America, where it was invented, and is yet in almost exclusive use, will be surprised to learn that Mr. Lillie claims the novelty of making diagonal models at this late day. Such models were made, as early as 1830, by ourselves; and we have, for twelve years past, taught the utility of making them, not only to show the diagonals, but the water and section lines, and, indeed, every other important line known to draughtsmen, in the *same* model, for the purpose of aiding the *eye* to embrace a full view of the draught and model combined, and thus to familiarize it with every outline of shape, lest, from continued habit, it should become wedded to a particular set of lines, from which it would be difficult to depart in practice. (See "*Marine and Naval Architecture*," published in 1850.)

That diagonal lines approximate the direction of lines of resistance, is no *new* thing to many of the ship-builders in the United States; but that the lines of resistance can be defined *before the model is made*, or will coincide with *straight* lines in the body-plan on any given model, will be disputed by every intelligent architect. Models may be made in which "water-lines" or section-lines may more nearly exhibit the lines of resistance than the diagonals, and these things ought to be familiar to all. With regard to the "radiating" theory of resistance which this pseudo-inventor surreptitiously seizes, we will remark, that all which is valuable was embraced in the discovery and elucidation of the *right-angled pressure* theory, founded on the equilibrium of fluids, which has, many years ago, been ap-

plied to vessels of every class built in the waters of the United States, and now constitutes the basis of American success in ship-building, where that success is measured by the standard of the age. Who was foremost in the investigations, inductions, and discussions, which led to the establishment of a philosophical theory of resistance on the submerged bodies of vessels, it is not our purpose now to inquire; but whatever "diversity of opinion" may yet "exist" among the ship-builders of the United States respecting "round-lines" or "hollow-lines," all "parties" will agree that Mr. Lillie has no just claims upon them for his crude pretensions, and might as well "come to the conclusion that there must be some mistake" in his "Explanation."

Without the egotism of this "Explanation," which has been exposed, we would have regarded this model as a fair effort to illustrate the diagonal method of putting models together to show *approximate* lines of resistance; and more than this cannot be awarded to this exhibitor.

There is but little doubt that if "water-lines" were discarded in modelling, and the very *same* vessels were exhibited in diagonal or sectional models, many of those nautical amateurs (?) who dote upon a favorite "line" would fail to identify the cherished hobby, to such extent have these parties been accustomed to observe one set of lines, instead of the entire configuration in rotundity. Indeed, we would not be surprised if, upon experiment, it were found, that a model could be so striped over with lines that superficial critics would be quite unable to pronounce their judgment upon it, when, if all but the well-known "water-lines" were removed, they could then deliver their opinions with accustomed intelligence and certainty! All such are unqualified to discuss the vexed question of "lines."

But we pass to offer a few remarks on some models which occupy a conspicuous place beside those which we have already noticed, and which may be safely set down to assume a prominent position in the kingdom of *fancy*, and demand more than a passing glance from the man of the mould-loft or the quarter-deck. It is a fact, no less notorious than true, that innovators whow know least of the practical operations either of the ship-

yard or the ship, and of the laws of atmosphere and ocean, have permitted their imaginations to wander farthest into the mazes of speculation and idle theory concerning nautical mechanism and navigation. Quite safe will it be to set down another fact, equally prominent in the history of ship-building, that few men have ever succeeded in improving the art who have not been conversant with the details of practical architecture, and possessed, in some degree, a reliable knowledge of Nature's conditions for success.

We are led to these reflections upon examining a chimerically-shaped block of pine wood, painted black, and gilded in certain points, denominated a *Sea Yacht*, doing honor to the singular notions of its maker. Above water, it bears the likeness of a vessel; but below water, every modeller will concede the entire *originality* of the most heterogeneous shape ever designed for the bottom of a ship. This yacht has two bottoms—one formed upon, and extending beyond, the other, and, of a consequence, has two bilges also, connecting the two bottoms to the top-sides. The lower bottom and bilge is sharpened out fore and aft, having little or no dead-rise as the ends are approached; but the upper bottom and bilge is carried to the extremities, similar to the common manner of straightening out the bilge. A more singular contrivance to increase the *resistance*, by abruptly disturbing the fluid under the bottom, and augmenting the uneasiness of oscillations at sea, by the addition of an extra pair of hard bilges, extending fore and aft, has never before found expression at the hands of a model-maker, or challenged public attention as an instrument adapted to the purposes of navigation. If it was meant for a fancy humbug, to take off some of the extravagant notions of other inventors, it is very good indeed, and covers the mark exactly.

We may learn from this a new application of an old aphorism—"Things are not what they seem." When a ship is launched her modeller's follies are half concealed to the gaze of the casual eye, and the stereotyped index of the *water-line* affords but the crudest basis for an opinion of the model. The practised judgment of the criticising mechanic weighs every mark, line, and lineament, and at last descends into the *hold* to

complete his impression of the shape of displacement. Even so with this yacht: if built and launched, the top-sides would afford no indication of the secret forms moulded underneath, and the model might pass, as others do, in a fleet.

Of all the nautical humbugs that ever engrossed public curiosity for a brief space of time, and was cast highest and dryest beyond the drift-wood washed into line, showing the tide-mark of time upon the beach of vision-dom, the *swordfish* model of Darius Davidson of this city stands pre-eminent. This distinguished wholesale modeller once opened an office in Broadway for modelling *steamships, clippers,* and *yachts,* upon his *patent* plan. He advertised largely, got up imposing lithographs—covering ocean and river with sailing and steaming swordfishes—published a pamphlet, and, best of all, built a boat to illustrate the new discoveries he had made. After challenging the whole world to test his claims, and expending much energy, time, and money, the gale of excitement blew over, and his *reckoning* seems to have been lost. At all events, we have nothing left of him but one of his "logs" on exhibition, denominated "*Leviathan,*" designed, as we read, for a *sea-steamer.* This "log" we refer to is intended to represent the model of a navigating monster 700 feet from *sword-point* to *sword-point,* 500 feet on deck, 80 feet beam, and 60 feet hold. These mammoth dimensions have only found a parallel in the great steamer building in England, under the superintendence of Scott Russell, Esq., for the Eastern Steam Navigation Company, which will constitute one of the most magnificent experiments in ocean navigation ever undertaken by man. In the conception of so gigantic an enterprise, and in the novelty of shape which Mr. Davidson proposed to adopt to ferry the old Atlantic over in five days, it is doubtful whether the theorists over the water are entitled to the balance of credit. It has not yet been the fortune of our exhibitor to prove his faith by his works.

For the model, imagine a ship with both ends *alike* below water, projecting 100 feet forward and 100 feet aft of the stem and stern respectively, and whittled out to a point, in imitation of the blade of the swordfish, at the termination of a horizontal line drawn through the centre of displacement, or buoyancy.

This line, located at a height half way between the base and load-line, measures the greatest length, and the shortest length is found at the planksheer. The knight-heads and stern rake as in the usual manner. The vertical longitudinal section, passing through the middle of the ship, presents the outline of two arches—one natural, the other inverted—the chords of which may be supposed to coincide with each other, and with the line of greatest length, drawn as above; and the extremities, uniting at the same point, define the mysterious *blades* of the ferocious fish which bears this name. A "leviathan" "swordfish" propelled by *steam*, with the sword of the fish on both ends *alike*, what could be more promising to a wondering age? The summary style in which such a ponderous engine of locomotion was calculated to wade through the depths of the Atlantic at the rate of thirty miles an hour, was sufficient to disturb the remotest seas, create new currents from shore to shore, and excite hoary Neptune to quake in his retreat. All this would follow, the sanguine might suppose, if this great idea was followed out in the spirit of its projector. But, alas for his enterprise! the *originality* of his model forbids the hope of success. On examination, this will be found to consist chiefly in extending the lines of the bottom 100 feet beyond the perpendiculars of the deck as described, whereby the lifting power of either end is destroyed, inasmuch as it is contemplated to immerse the hull, so that the load-line shall be near 200 feet shorter than the extreme measurement beneath, as described, which, in the model before us, will cause the right-angled pressure to be about equalized, and resolved into a horizontal force. The "Leviathan" is adapted to *tunnelling*, rather than riding, the seas; and each huge wave would break on the back of her projecting *sword-blades* as on a lee-shore. They would become dangerous appendages at sea, being formed, as if by singular design, to receive the full shock of sea in oblique courses with respect to the same. She would pitch but little, as the seas would break and wash over her; but, when the dimensions and shape are considered, we must pronounce her adapted to prove one of the most uneasy vessels ever designed, and capable of rolling her engines overboard in the first gale of wind, if it were possible.

We were not able to discover any contrivance for steering; and as the termination of the aft extremity is such as to forbid the idea that the usual apparatus of rudder is to be used, we came to the conclusion, that since it was a *fish* invention, and everything was meant to be right, tight, and *scaly*, it was the intention to use *fins* for that purpose. Conjecture also suggested, that possibly the inventor of this unwieldy project had discovered some method, commensurate with its magnificence, of manœuvring this "Leviathan," unknown, and unnecessary to fish of the smaller fry. Instability, uneasiness, unmanageableness, wetness, danger, and dulness of speed, would characterize this model, varnish and gilt to the contrary notwithstanding. A fine lithograph of her imposing appearance at sea, in smooth water, all going finely, gives life to the dull reality of her log-like expression. One single advantage this model does possess, and perhaps it is the only one Mr. Davidson claims wherein ship-builders would agree with him—at the same time they would all denounce the deceptive error—we refer to the *evasion* of the *tonnage law.* Being 200 feet longer than the length would be taken for admeasurement, would, of course, *under-measure,* so far as length was concerned, two-sevenths of the whole tonnage, while she would be 20 feet *deeper* than the depth would be adjudged under the rule; so that she would *evade* the law, or the intent of the law, by *one-third* with respect to *depth.* So that here, then, is a vessel proposed, of such shape and dimensions as to defraud the revenue $\frac{1}{2}\frac{3}{1}$ths, or near 62 per cent.; and the United States of America are not competent to correct it by any rule or law for computing the *true* tonnage! When will our legislators consent to do, or undo, a few jobs for maritime interests in the department of commercial mechanism?

To crown all, the inventor of the "Leviathan" claims to cover his *dis*coveries by a patent; but having no foundation in reason or *utility,* without which they would never be likely to have been appropriated to public use. No less than "sixteen separate engines, of 5,000 horse-power," were to furnish propelling power to the exploded "Leviathan."

A Clipper Corvette, by a naval mechanic of this city, deserves our notice:—Dimensions, 216 feet on deck, 46 feet beam, and

26 feet hold; intended for an armament consisting of 22 eight-inch and 2 ten-inch guns. Her stability would depend on ballast, to enable her to carry and work guns on the upper deck; the draught of water would be great, as the bottom is sharp, and bilge easy. We would deem it essential in this class of naval ships to secure less draught of water, and more intrinsic, or natural stability. The time has gone by when a farmer going to mill would judge it *wise* to put his wheat in on one end of the bag, and a stone in the other, to *balance* it on his horse's back; and it should be set down in like manner with regard to naval or marine architecture. An *economical* outlay of *depth*, with a *liberal* distribution of *breadth*, is all that is required to secure the necessary stability. This model would be found deficient in lifting power on the bow, when required to carry a press of canvas in heavy weather. The cutwater is heavy and old-fashioned, but the model is well made.

Another mechanic also exhibited a very fair model of a frigate. His workmanship is very neat.

Two models are exhibited from the British Provinces: one an improved specimen of the provincial model from St. John's, Newfoundland, and the other from Nova Scotia—a dull sailer by the standard of to-day.

We have now sketched our impressions of most of the models in the Exhibition at the Crystal Palace. There are a few others. Many of those on the Catalogue cannot be found, and some which are exhibited cannot be found on the Catalogue. If we have omitted to speak of such, it was because they did not appear before us when we bid adieu to the Courts of Nautical Art.

For the Nautical Magazine.

NAVAL CONSTRUCTION IN 1813.

MESSRS. EDITORS:—I have been thinking that if the British Admiralty knew how fast we can work on this side of the Atlantic, when a fleet or a fortress is to be taken, it may be they would have given an order for enough vessels of light draught of water to have taken Cronstadt during the present season, and perhaps have ended the war at once.

It has been said that what has been done once can be done again.

The schooner Sylph, carrying 14 guns, 4 long 32's, and 10 6's, was built on Lake Ontario during the war of 1812, in the short space of two weeks. On the same day on which she was launched, the masts were put in, and the rigging over the mast-heads; on the second day, she was rigged, manned, and the guns mounted; her mainmast was 127 feet long, her mainsail had over 90 feet hoist; she had a lug foresail, with 2 bonnets; her standing jib had also 2 bonnets; she had a foretopsail and topgallant-sail, with a foreyard of 60 feet, a square-sail that spread the yard and reached the deck; a main gaff topsail, and main-topmast staysail, completed her suit of canvas. On the third day after launching she was ready for a cruise. One hundred of this class of vessels could be built now in the same length of time, inasmuch as the facilities are much greater now than they were then. So thinks an

OLD SALT ON THE LAKES.

For the Nautical Magazine.

CHIPS FROM CHARLESTOWN NAVY YARD.

Messrs. Editors:—As I promised, I have gathered a few fragments from the arena of Uncle Sam's nautical mechanism "down East," and offer the same, with many apologies, for the edification of your readers. If any of my blocks are tough to split, do me the justice to believe they are the best accessible to the casual gatherer, whether owing to the quality of timber or the temper of the workmen.

Charlestown Navy Yard presents one of the most eligible sites for business to be found near Boston, and shuts out one-half the commercial ground of Charlestown from appropriation and occupancy; so much so, that it is very generally regarded by the citizens as an unprofitable institution. Were it removed, as many are anxious to see accomplished, it would constitute the most splendid tract of water-front, free from the tedious obstruction of bridges, to be found around Boston Harbor.

The Yard is kept in the finest order, and everything shines with neatness. There is here one large double stone dock for repairing, wherein the *Cyane* and *Saratoga* frigates are now laid up. The former has been thoroughly overhauled during the past month, and refitted with a new suit of wales, hammock rails, &c., also re-calked, and copper repaired. A good breadth of beam, full fore body, and clean run aft, characterize the model of the *Cyane*. Stripped of her spars and armament, she looks as unpretending and retired as a Mount Desert coaster.

The *Saratoga* is the larger vessel, and the dullest looking; the cutwater is especially overgrown and disproportionate, and might be razeed to advantage. She is afloat, and now being stripped to receive a new suit of wales and bulwarks, and otherwise completely repaired for service. The frame, of live oak, is entirely sound, and thickly pierced by the plank-fastening, which in the U. S. Navy is metal, iron and copper, no treenails being used. A lengthy, tough job it is, with the set-auger, hand-saw and iron wedges, to remove the alligator jacket of this noble ship. An inspection of the operations seems to disclose a design to dress up the old time-worn features of the *Saratoga*, either by new combinations of material, or changes of the old fittings. Those quarter deformities, or galleries, in naval nomenclature, are also being removed by mall and wedges, and we trust they will lose the pieces, and never replace them. But, the mechanical flourishes of a barbarous system of architecture, they have long since grown obsolete with nautical architects of cultivated taste, and are considered by all as outlandish humbugs. Why should joiner work be plastered on the quarter, to hide the artistic conclusion of the side and stern? We say, remove the cumbrous nuisance, and let the eye run free from head to stern. I was informed that no less than 100 men were employed in repairing those ships.

But let us pass to the new steam frigate constructing in the lower shed, which has been lengthened 20 feet to admit her extraordinary length—for a naval ship. Some progress has been made since these old ship-houses were built. The keel of this vessel is 257 feet long. The stem is swept after the old fashion of an arc and tangent, raking slightly. The frame of fore body

is entirely raised; keelsons and deadwoods are fayed, but the stern cants are not yet put up.

Owing to the costly efforts made, the body is very fair, and the frame one of the fairest and squarest we have ever seen. It is of live-oak, which has been seasoning 23 years in the sheds. Its gnarled fibres present fine work for the adze. The ——— is pierced for 34 guns on the main deck, and, I am told, is to carry as many more on the upper deck. She will have five decks in all, and draw about 24 feet water, with the armament on board, and is about 52 feet beam.

As to the model, we do not hesitate to pronounce it a British imitation, though apparently a very fair one. We regret that in naval affairs our guiding spirits should naturally be content to follow European systems of architecture rather than that of America, which has raised our commercial fleets to proud pre-eminence on the broad sea of commerce. We are informed that five of the six steamers ordered by Congress are to be built after the same model, and of the same size.

The *Niagara*, building in Brooklyn Navy Yard, is to be longer and larger than the *Great Republic*, and is modelled and superintended by Mr. George Steers, the accomplished architect of the yacht "*America*." But whether Mr. Steers has been at liberty to embody the dictates of his own judgment, or obliged to submit to those of others in the production of his model, we are not informed. One thing we know—absolute freedom in modelling is a prime condition of success.*

We have learned that the Chief Naval Constructor has furnished the model for the smaller frigates, and designed them for high speed. Very little appears to be known of their dimensions or model, save as developed in the construction. It would seem designed to create a profound sensation, if successful; but if not, then to escape criticism.

The dead flat frame, of which there is but one, is placed near

* It is said Mr. Steers has had a fair opportunity to exhibit his skill in modelling the *Niagara*, which is to be the largest ship ever built in this country. Her speed is set down for 16 to 17 miles per hour. *Dimensions*:—Extreme length, 345 feet; depth of hold, 31 feet; breadth of beam, 55 feet; loaded draft, 22 feet 9 inches.—Eds.

SHIP-BUILDING IN EUROPE.

CORRESPONDENCE OF THE NAUTICAL MAGAZINE.

BERLIN, *Nov.* 1, 1854.

EDITORS NAUTICAL MAGAZINE:—Business is very dull in this country, at present. The prosperous times which ushered the present year into life are past. But as the world is round, I confidently look for a new revolution in business at some future day.

With respect to ship-building in Europe, my patriotism leads me to wish that external circumstances were as favorable here as in your free and progressive land. In marine architecture the conservative spirit of our commercial men will not permit us builders to walk; therefore we take to *crutches*, and the Americans must not be astonished if we follow no faster. Human nature is, in my opinion, all the same the world over. As the dog is taught, so he will bark; but when forbidden to bark aloud, he will make it up by internal murmurings.

As I passed through London on my way here, I saw on the stocks of Scott Russell the new iron monster steamer, about 675 feet long, 83 feet extreme breadth, and 58 feet hold. The keel is laid, and most of the water-tight bulkheads erected. This is, therefore, no *Tartar* news. The keel has no descent, but is laid level, in which manner she is to be launched. In building so large a ship it affords great facility to the work by thus keeping the stages level, and the bulkheads perpendicular. A railway has been laid her entire length to expedite the conveyance of materials to the different parts of the work. A new and valuable feature of the construction consists in making the ceiling of this vessel to stand two feet apart from the outside planking, and is to be water tight, extending up to about four feet above the line of deepest immersion. Thus the walls of the hull are made on the air-chamber, or life-boat plan. The decks are to be without sheer—a straight plane; which again affords great facility in setting off the right-angled inside work. There is to be one engine, of about 1,000 horse power, for working a pair of side wheels; another, of about 2,000 horse, for handling

a screw propeller.* This great steamer is to be built entirely of iron, and is divided into ten water-tight compartments. Extraordinary measures are being adopted by Mr. Brunel, the Architectural Engineer, to introduce strength and security in the fabric. Mr. Griffiths' predictions regarding the construction of large vessels will soon come to pass. I refer to his discussion of this question in the "Ship-builder's Manual." This vessel will reach the limit there set down of 10,000 tons. This ship is destined for the Australian trade, and said to be calculated to make the passage in 30 days, carrying, in addition to freight, 600 first class, and 1,000 second class passengers. She will draw 20 feet when light, and 30 feet when loaded. The largest screw steamer now in England is the Himalaya, 350 feet in length.

When I was in Liverpool, the British Association for the Advancement of Science, which claims in Europe much honor in connection with the experiments for ascertaining the theoretical principles of forming the water lines of vessels, had a meeting, at which Mr. Russell, the builder of the above monster steamer, defined his views. He claimed that "it was now admitted in Europe and America, that if a ship-builder wished to have a very easy, speedy ship, he must give her bow, not the round water-line, as formerly adopted, but a fine, long, hollow line. He said it used to be, that the broadest part of a vessel was one-third the way from the stem; now it is one-third the length from the stern. Upon this principle American and British clippers are now built. He declared that it was certain that 24 feet of length in the entrance lines of a vessel would give a velocity of 8 miles an hour; to run 16 miles an hour, the bow should be nearly 96 feet long; and to reach 24 miles an hour would require 216 feet of length to the bow; so that we could not expect to attain this

* We understand that James Watt & Co., Birmingham, England, are constructing one set of engines for this ship. The screw engines consist of four 84-inch cylinders, 4 feet stroke, paddle wheel engines, making by Russell, of four 74-inch cylinders, and 14 feet stroke (oscillators). The power of the screw engines, taking them at 7 lbs. and 45 revolutions, 1,692 horses; the paddle-wheel engines at 12 revolutions. 1,228 horses, making 2,920 *nominal* horse power; but as steam of 25 lbs. is to be used, we may assume that the actual power exerted will be four times the nominal, or nearly 12,000 horses. Screw is proposed to be 24 feet in diameter, with 40 feet pitch, and the speed is calculated at 18 or 19 miles per hour, at a draught about 28 feet.—EDS.

g-eat speed until we build ships at least 400 feet long. From all the experiments Mr. Russell had made, these facts were undoubted. He did not believe there was a vessel in existence shorter than 180 feet which could go 16 miles an hour; and if there was such a vessel forced to go more than that, it was at an expense of power utterly preposterous. He thought that great length would accomplish most with the least power." From this exposition of principles you may gather some idea of the model of this great vessel. We have in our mind several steamboats and vessels of light draught we have seen in the United States, which can exceed the limit of velocity set down by this distinguished authority. Of *light draught,* I say; for do you not perceive that Mr. Russell has forgotten to take into account the all-important element, *draught of water,* and bulk of *displacement* likewise? Do we not all know that any given vessel may have her speed greatly increased or diminished by diminishing or increasing the draught of water and displacement, while the length of the vessel, or of bow, remains the same? How, then, may we obtain speed in a vessel of fair length, without constructing a monster, to draw over 30 feet of water, which would be shut out from nearly all the sea-ports of the globe? Why, simply by choosing a moderate draught of water. And, while Mr. Russell has been building air castles upon the *one idea* of *length,* having secured from 11 to 12 times the breadth for the length, he has only secured from 19 to 20 times the depth for length in dimensions. Now, you have steamships, in America, in length from 20 to 25 times the draught of water, and steamboats in length from 25 to 30 times the draught. The length of your steamships, in ratio to breadth, varies from 4 to 7 times the breadth, and the length of your steamboats, from 6 to 9 times. Therefore, Mr. Russell might denominate your steam vessels *short* and *shallow,* while you would, undoubtedly, call his *chef d'œuvre* on the stocks in London, *long* and *deep.* I am unable to discover any superior wisdom in adopting such great depth, calculated, as it is, to cut down the advantage of great length.

I have seen nothing else new in England, in the ship-building line, and would like to speak a word of Sydenham Palace, in London, which surpasses all in that line I have ever seen before.

or ever expect to see, but I fear your readers would think it a digression from the main question.

What a sad accident has befallen the splendid steamer Arctic! Oh, what shocking loss of life on that lamentable occasion! I pity the poor souls that confidingly trusted their lives on the noble Arctic—imperfect memorial of man's finite wisdom and short-sighted skill. I shudder when I contemplate the momentous responsibilities which steamship owners, builders and mariners assume, when they solicit the sea-sick passenger for conveyance over the tempest-driven sea, in the frail-walled bark! Enhanced security in ocean-going fabrics has yet to be wrung from architecture, or we shall be compelled to sit down in sackcloth and ashes, and hide our heads in shame. Profound disgrace will mantle our cheeks in crimson, and our shoulders be borne down with crime, if the genius of commercial mechanism fails to secure safety to human life, while avarice gloats over the *dollars* that are withheld to make the homicidal ship an ark of safety.

In reflecting upon the shocking disasters which attend navigation at the present day, it is gratifying to know there have been a few individuals whose voice has been lifted for a better mode of constructing vessels, viz.: *to insure the ship in her mechanism*, rather than the insurance offices. On this ground, I envy your chance of bringing out a new Atlantic steamer, on your *life-boat* principle, combining strength and safety, and unsurpassed speed.

I close, in order to have this reach the steamer.

H. A. G.

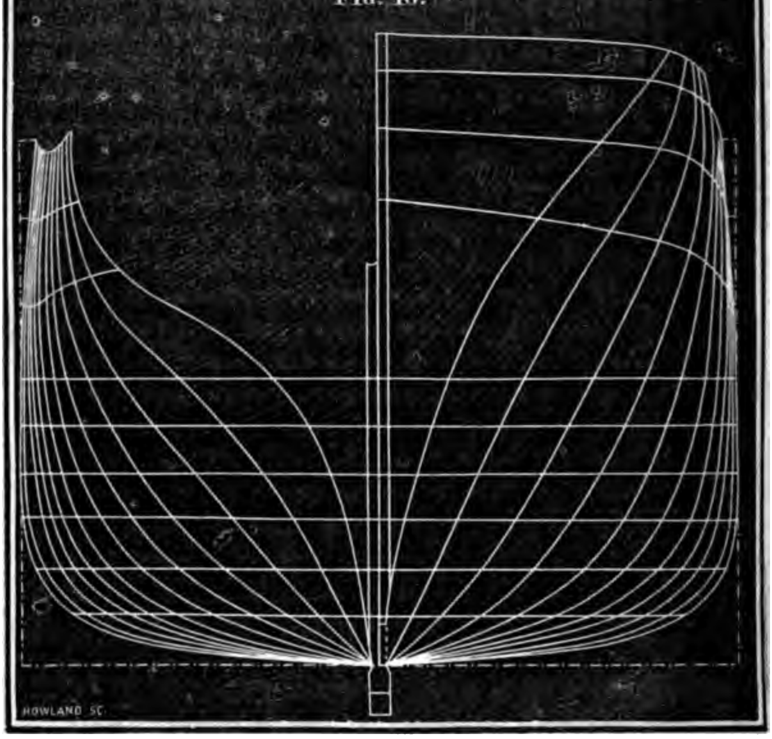
IN PEACE PREPARE FOR WAR.

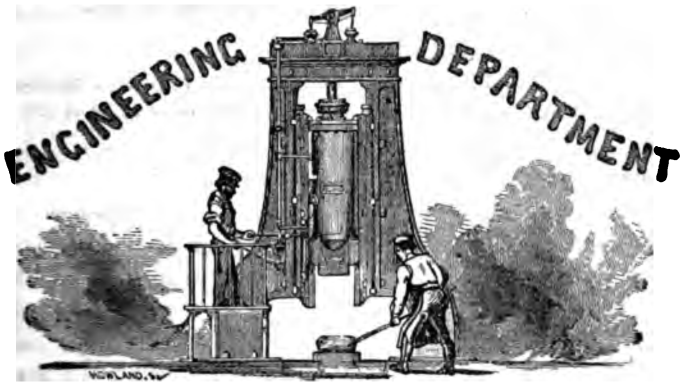
The late difficulty between Mr. Soulé and Louis Napoleon has given rise to the expression of fears that a war with a foreign naval power would find us unprepared, seeing that our navy is comparatively small. We have no fears to express in the event of such an issue.

The mercantile marine of every nation should be constructed on the self-protecting principle; and had the tonnage laws of the

United States been what they should be, we should now have (with the exception of the armament) the largest navy in the world, self-supporting as well as self-protecting. Our clipper ships are ready for armament of the heaviest calibre, requiring only the additional longitudinal strength necessary for mounting the pivot guns: while our freighting ships, by removing the upper deck, and increasing the longitudinal strength, would be equally well prepared. We have annexed the body plan of one of our freighting ships with the deck thus removed, which will be readily recognized by the nautical mechanic as well adapted to the purposes of war; and inasmuch as our merchant vessels are superior to our war vessels in point of speed, we need have no fears of our ability to speedily construct an efficient navy when the exigencies shall require the same.

FIG. 10.





SECOND ANNUAL MEETING OF THE SUPERVISING INSPECTORS UNDER THE STEAMBOAT LAW OF 1852.

This meeting was held at Detroit, from the 6th to the 11th of October, and very important business transacted. We have received from the Treasury Department in Washington a full report of the proceedings, which we abridge for the readers of the Nautical Magazine.

Present—John Shallcross, 6th District, *President.*

John S. Brown, 3d District, *Secretary.*

William Burnett,	1st District.	Benjamin Crawford,	7th District.
Chas. W. Copeland,	2d "	Isaac Lewis,	8th "
William E. Muir,	4th "	Augustus Walker,	9th "
Davis Embree,	5th "	William M. Gouge, Esq., U. S. T.	

At the request of the Honorary Secretary of the Treasury, Professor J. Lawrence Smith met the Board, and addressed them on the subject of alloyed metals and explosion of boilers.

It was *resolved* that "*sounds of the steam whistle*" should be substituted for "*sounds*" of the "*bell*" in the regulations for pilots under the steamboat law.

With reference to the application of fusible alloys to boilers, it was agreed that the Local Boards be instructed *not* to approve of any mode of application in which such alloys shall be exposed to the *pressure* of the steam.

The term "small boats" in the law was defined to embrace all boats having "three boilers or less;" all boats carrying over three boilers as "large boats."

The following report to the Secretary of the Treasury was adopted:—

the evidence has been reported. The penalty inflicted in the case of the Kearney was the forfeit of the engineer's license; in that of the Timour, no decision regarding the engineer has yet been made. The Caroline was burned on White River, March 5th; boat and cargo lost, also between 50 and 60 lives. The origin of the fire was at the after-end of the boilers, and the fire-pumps could not be used. The boat was run ashore, but such was the confusion among the passengers, no use was made of either life-boats or life-preservers, hence the deplorable loss of life.

We mention as a tribute to the memory of the pilot, JOHN R. PRICE, that after the discovery of fire he continued at his post, heading the boat for the shore, until he was actually burned to death! The steamboat men and citizens of Memphis are about erecting a monument to commemorate this noble self-sacrifice.

An unusual number of boats have been sunk by snags, in consequence of the continued low stage of water in the Mississippi and Missouri rivers. From these causes, the Amazonia was sunk on the 15th February, and two lives lost.

The Pike was sunk on the 10th May. Ten lives lost. Sixteen other passenger boats were sunk and lost; also ten others sunk, and afterwards raised.

Sixth Supervising District.—A collision between the Trabue and John McFadden took place April 3d. The latter sunk. Boat, cargo, and four lives lost. The pilots of both boats were suspended. The Ohio and W. B. Clifton came in collision in April. The latter sunk. Boat, cargo, and four lives lost. The license of the pilot of the Ohio was revoked. The only accident by steam has been the collapse of a flue on the Reindeer in March. Thirty-eight lives lost. This accident was attributed to the negligence of the engineer; his license was therefore revoked, and he soon after died.

Seventh Supervising District.—No lives have been lost on any steamer. In March there occurred a collision between the Fanny Fern and Thomas Swan, sinking the former. The Cuba ran upon the wreck of the Fanny Fern in May, and sunk. No loss of life.

Eighth Supervising District.—No loss of life to passengers. The Badger State sunk on Wolf river in October. In May a collision occurred between the Benjamin Franklin and Galena, sinking the former. August 12th, the Van Ness Barlow exploded a boiler, killing two of the boat's hands. This case is still under investigation. The Garden City run upon a reef in Lake Huron in May. Boat and cargo lost, but no lives. The Traveller was partially burned at the dock in Chicago, July 12th. No lives lost.

Ninth Supervising District.—No loss of life. There was a collision upon Lake Erie between the Buckeye State and the schooner Oneida, in October, 1854. The latter was sunk, and the captain, with two hands, drowned. It was clearly shown the schooner was in fault. A sad calamity has come to our knowledge since the commencement of this report, viz., the burning of the E. K. Collins, October 8, near Malden. Twenty-three lives are known to have been lost. The origin of the fire is not yet known. It is stated that this boat was most completely equipped. So rapid was the progress of the fire, every one on board was obliged to leap into the water before the boat struck the beach.

There is a practice among steamboat owners, in some of the districts, which has caused confusion and difficulty. There is a law requiring all vessels to have their name painted on the stern in white letters, upon black ground, at least six inches long. Now, although the *letter* of this law is complied with, its spirit is evaded; for though the name be painted upon the stern, as required, still another name appears upon the wheel-houses,

bulwarks, and pilot-houses, and this name, which may be termed the wheel-house name, is that under which the steamer is advertised, and known to the travelling public. The same steamer has in this way been furnished with three or four different names, none of which appeared on her register. The inspectors suggest that only the registered name be permitted to be painted on any part of the vessel. Much difficulty has been experienced in enforcing the law with reference to carrying oil of vitriol and oil of turpentine. There has also been much difference of opinion among the attorneys of different districts as to the mode of bringing suits, whether they should be brought in the name of the United States, or in an individual. The prosecution of suits would be much facilitated if the law was amended so as to set forth that they be brought in the name of the United States. There has also been much difficulty in prosecuting suits, consequent upon no specific provision having been made for the necessary expenses, and the inspectors are thus powerless for *enforcing* the provisions and penalties of the law.

THE MEXICAN WAR STEAMERS SANTA ANNA AND ITURBIDE.

These vessels were built in New-York: hull by J. A. Westervelt & Sons; machinery by the Faron Iron Works.

They are of the same dimensions and model, and were designed for superior fleetness and efficiency.

DIMENSIONS OF HULL.

Length on deck	155 feet.	Tonnage	700 tons.
Breadth of beam	27 "	Average draught water..	11 feet.
Depth of hold	14 "	(Santa Anna but	13 ft. hold.)
Bark rigged.			

The particulars of machinery, and results of trial trip, are furnished by J. and E. Faron, of the Faron Iron Works, who are entitled to great credit for the satisfactory results of their engineering skill.

Engines—Two improved oscillating.

Diameter of cylinder.	36 inches.
Length of stroke	33 "
Diameter of (composition) propeller	10 ft. 3 "
Internal gearing, $2\frac{3}{8}$ths to 1.	
Pitch of propeller, 15 and 17 feet.	
Number of blades	3
Average revolutions of engines	25
" " propeller	$65\frac{1}{2}$
" pressure of steam	20 pounds,
cutting off at half stroke.	

Boilers—Two iron, 18 feet long, side by side.

Amount of fire surface......................	1,100 square feet.
" grate surface....................	45 "
Consumption of coal......................	12 tons in 24 hours.

The engines are alike in both vessels. The trial trip took place in New-York harbor, and down to Sandy Hook, on 28th October, 1854.

Performance.—During the run from the Battery at New-York, to Sandy Hook, the engines averaged 27 revolutions per minute, and the prpeller 70 $\frac{7}{8}$ths. Average pressure of steam 20 pounds, vacuum 26, throttle valve nearly closed, cutting off at half stroke, on account of the boilers foaming. It is expected that when the boilers have been in use a few days, so as to prevent foaming, the engines will make 35 revolutions and the propeller 90, when these vessels will be equal to any screw steamers in the world of their tonnage for velocity. On this trial, they left abreast the Battery at 2½ o'clock, at slack water, and made Sandy Hook in one hour and twenty minutes, under the above-mentioned difficulties, distance 18 nautical miles. The speed on this trial may be set down at from 12 to 13½ miles per hour.

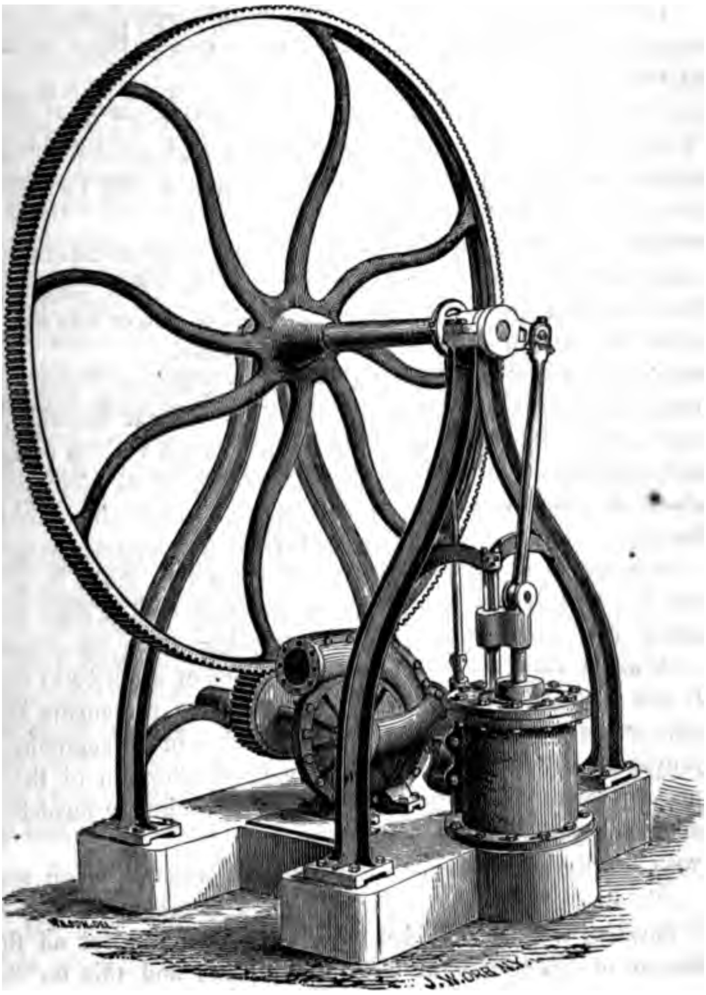
Armament.—Each vessel mounts 10 guns on main deck, one long brass gun on forecastle deck, and one small brass swivel gun fitted for the launch.

These vessels were completely fitted out in New-York, by Carlos Butterfield, Esq., Agent for the Mexican Government, who states the entire cost of hull, spars, and armament, with provisions for six months, to have been $180,000. They have just arrived at Vera Cruz, and report a performance of 11 miles an hour under steam alone, and 14 miles under steam and canvas.

Improvement of the St. Lawrence River.—Mons. Maillefert, whose famous operations in submarine blasting are so widely known, has been engaged to remove the rock obstructions to navigation in the Long Sault, Coteau, Cedars, and other rapids of the St. Lawrence, between Ogdensburgh and Montreal. Such an improvement will be of paramount importance to our Western commerce.

GWYNNE'S PUMPS FOR SHIPS.

(*Continued from page* 101.)



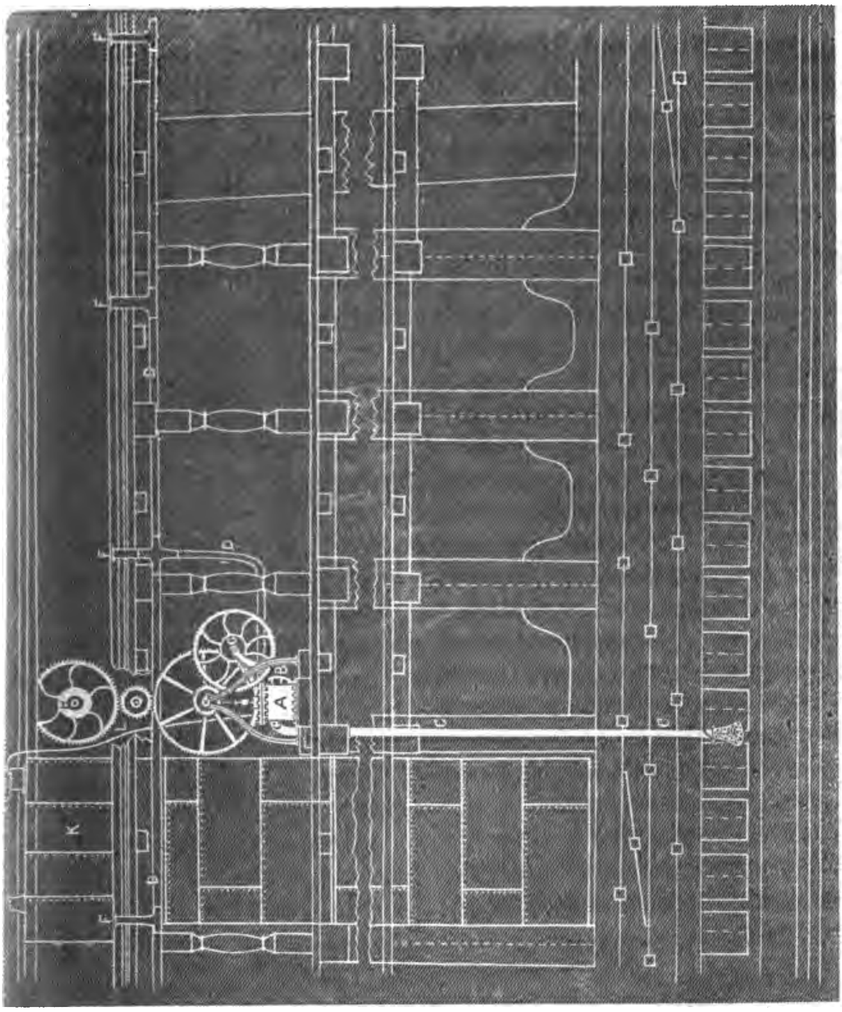
THE astonishing performance of these pumps at the Crystal Palace induced us to visit the "Era Works," Atlantic Docks, Brooklyn, where "Gwynne's Pumping Engine" and "Pumps" are manufactured.

We give the data of two of these pumps which we saw at work. The first, size No. 4, with 3-inch suction, and 2-inch discharge pipe, raised 210 gallons of water, 55 feet high, in one minute, with 4½ horse-power. This pump is of small size, weighing 1,450 pounds, and is sold for $450. The performance of another, which we observed at work on the dock, was equally satisfactory, raising a YOUNG RIVER, 30 inches broad by 6 inches deep, out of the bay into a large tank some 12 to 15 feet above the surface. The size was No. 1, B, with 7-inch suction, 6-inch discharge-pipe, raising 1,537 gallons per minute, with 13 horse-power. Its weight is 1,750 pounds.

Those designed for vessels are so arranged as not to be choked by corn, chips, raw turpentine, coal, sand, or other impeding substances, and admit the passage of solids of one or one and a half inches diameter—a most important feature.

We present a view of a "Single Pumping Engine," and also a transverse and longitudinal section of the "Great Republic," showing how this engine would be applied to the various operations of hoisting, working ship, &c., in addition to its adaptation for pumping, and its utility as a fire-engine. Inasmuch as many of our large ships are being furnished with steam-engines, it certainly seems desirable to combine all these operations in one machine; and, so far as the pumps are concerned, a more important arrangement than that for working them by steam-power could scarcely be devised as a means of security at sea. We are satisfied that owners and underwriters, passengers and crews of vessels, would be put in possession of an augmented measure of protection, through the general adoption of these engines and machinery, especially in vessels already furnished with steam-boilers.

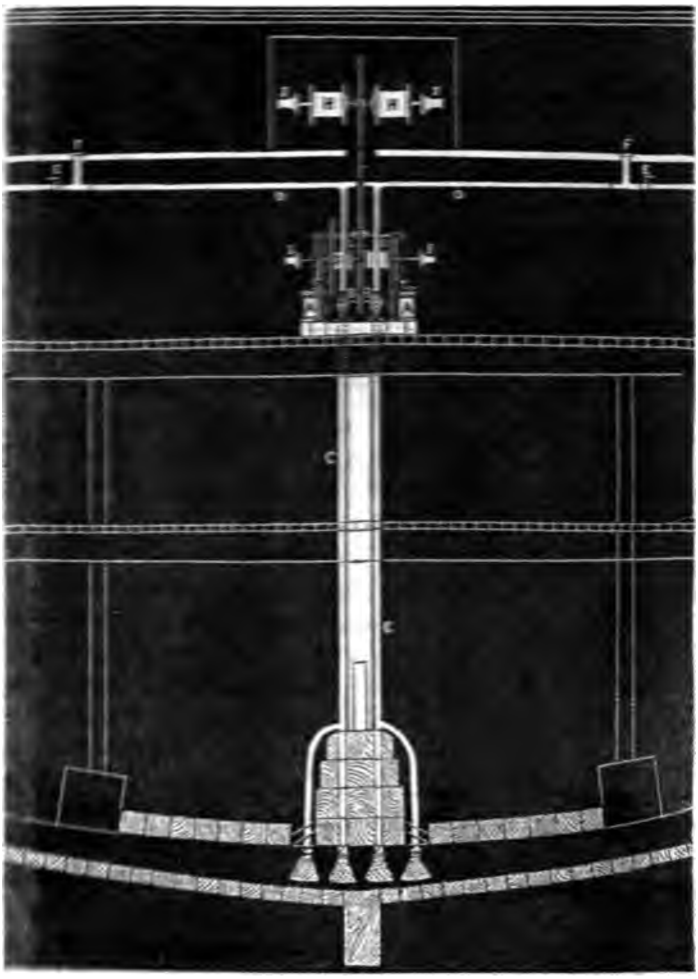
Nor can the assumption be regarded extravagant, which sets forth the day as near at hand when sailing vessels of 1,000 tons and upwards will be provided with a steam-engine for all the purposes of labor, both at sea and in port; and this, on the ground of economy, as well as of safety to human life. The scarcity of seamen already require it; and when its efficiency shall have become known, as it is beginning to be, the public mind will not be slow in demanding, nor the ship's owner tardy in providing, the motive power.



A A are steam-cylinders; B B, pumps; C C, suction pipe, with strainers at bottom; D D, discharge pipe, which, when closed by the valves E E, would allow fire-hose to be attached at any of the openings above deck, F F F F F F; G G are hoisting-drums on main-deck for discharging cargo; H H are similar ones on the spar deck, under the cover of the boiler-house; I I are windlass ends, for any common purchase; J J,

[illegible] K is the steam boiler on spar-deck; L is a pipe to [illegible] steam to the working cylinders.

Similar [illegible] refer to both plates.



Speed, *safety*, and *comfort*, are the demands of the travelling public. The two former have hitherto received the largest share of attention, as our steam palaces on ocean, lake, and river bear abundant evidence. But that the latter and most

important requisite has been sacrificed to the former, would also appear evident from the long list of wrecked vessels, and disastrous collisions that, within the past year, have carried their passengers from time to eternity, with an aggregate of wealth truly enormous.

The question arises, Is this great loss of LIFE and property inevitable, or is it due to *careless navigation, a deficiency of strength, and want of self-preserving machinery?* To us the latter is evident, and we are prepared to prove that not less than two-thirds of the disasters to ocean, lake, and river steamers might be avoided; and the same is true of sailing ships. Deep, rigid keelsons of plate iron, water-tight bulkheads, whether in iron or wooden vessels, *powerful pumps, reliable fire-engines*, life-boats, and life-floats, of some suitable description, together with efficient discipline in the crews and employees of vessels, *in time of danger*, would, we again assert, have prevented at least two-thirds the steamer losses of the past year.

What caused the loss of the *President?* Most undoubtedly want of longitudinal strength, which iron trussing, iron keelsons, and bulkheads would have prevented. The loss of the *Home*, we know, arose from the want of that strength which *hog-frames* fail to furnish, and iron keelsons alone can give.

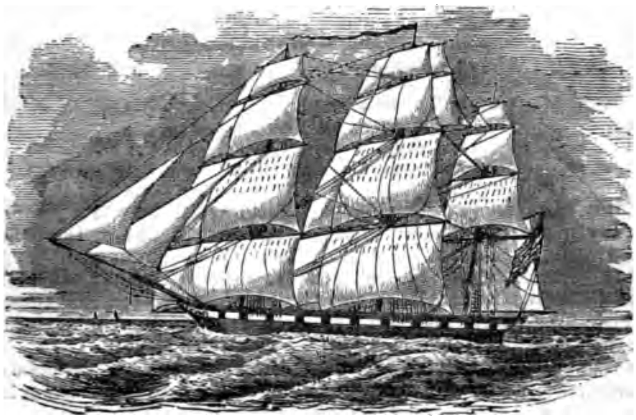
The *Amazon*, a new English steamer, burnt on her first passage out, might have been saved by a *reliable fire-engine*, and proper discipline. In this case, the fire broke out in that part of the ship where the fire-engines were *located*, and not one could be started! *Not a single stream of water* to save a noble vessel worth $600,000, and a cargo of *human life*—precious *beyond price*, if not to the owners of the steamer and the underwriters, at *least* to mourning relatives. What would our noble firemen say to this? Do they trust to a single stream when the commercial warehouse or social dwelling is wrapped in flames? Oh, no! they pour on stream after stream, add length after length of hose together, until they often reach one third of a mile or more. Engine after engine wheels into line, and the jets may be counted by the dozen. Let us bear in mind all this is done by *man-power*, perhaps a hundred, seldom more than

five hundred. The supply of water is often distant, and difficult to reach.

On steamers we may have *steam-power*, equal to 5,000 *men's power*, and the supply of water always at hand. Can we, as journalists and practical men, contemplate the reckless waste of life on shipboard, and witness with indifference the adoption of daily improvements and appliances on shore, equally applicable, and often most needed at sea? Shall we, or those whose true interests we advocate, rest in the belief, that our steamers or sailing ships have now the best and most reliable fire-extinguishers, or pumping apparatus, that can be furnished? We answer, No. We believe that fire-engines, capable of projecting ten, nay, twenty, streams of water—*no toy affair*—one-half or three-quarters of an inch in diameter—but one and a half or two inches, issuing from any part of lines of pipe, passing fore and aft and athwart-ships, capable of *drowning* out the fiercest conflagration with *certainty*, can and will be put into our steam-vessels within the coming year. The public safety demands and will have them. The most reckless traveller, after the appalling disasters of the past few months, will look to his safety, if not on his own account, at least for the dear ones left behind. The Life Insurance Companies, too, will look for greater safety to human life, and the *daily press* will thorn our sides until the "*dangers of the sea*" are no longer rendered appalling by *super-adding the dangers of the ship*. Better, therefore, anticipate than delay. Out of regard for *human life*, let us do that which, at a later day, an aroused public opinion will demand at the hand of the "Almighty Dollar."

Ship-Building in Scotland.—The River *Clyde* may be regarded as the metropolis of ship-building in Europe and Great Britain. Nearly all the British ocean steamers, and a large number of smaller craft, are built there. The total tonnage built on the *Clyde*, in 1853, reached the enormous sum of 167,580 tons, a very large proportion of which was of iron construction.

Nautical Department.



THE OLD BRIG "GLOBE."

We find among our California files the following quaint tribute to the memory of this notorious old sea-hulk, and since it is too good to lose in the wreck of newspaper articles, we give it a place in the NAUTICAL MAGAZINE. We, too, have known, long and well, the same old "Globe:" one of the *representative* brigs was she:—

There is something suggestive in the contemplation of an old ship, when, all her voyages done, she rests from her labors by the shore of the quiet harbor, or lies on her beam-ends upon the sea-sands, or wedged and stranded amid its pitiless rocks, like an old man when his work is done and his eye grown dim. The fresh paint of the vessel, like the hue of youth, has gone forever. Gone the strength of that oaken frame, and the stranded cordage, like gray hairs, is streaming uncared for in the wind! What a story that old craft could tell us, were it capable of speaking! What "yarns" of piping times, of southeasters on the coast of rock-bound Massachusetts, of hurricanes in the West Indies, of typhoons in the China seas, of the icebergs off Newfoundland, and the wrath of the storm king of Cape Horn! How the old hulk would "shoulder her crutch"—square her yards —and entertain us with stirring memoirs of quick or tedious passages, of heavy and straining cargoes, of chases by privateers and "long, low, black schooners," and breakers under the lee-bow!

The daily papers have been making notorious the hulk of the old bark *Globe*, lately converted into a cistern for the protection of the city. That old tub is one of our earliest acquaintances. We saw her years and years ago, when

"——— the Master
With a gesture of command,
Waved his hand;
And at the word,
Loud and sudden there was heard,
All around them, and below,
The sound of hammers, blow on blow,
Knocking away the shores and spurs.
And see! she stirs!
She starts,—she moves,—she seems to feel
The thrill of life along her keel,
And, spurring with her foot the ground,
With one exulting, joyous bound,
She leaps into the ocean's arms!"

Ah, Mr. Longfellow, the ship you celebrated so beautifully was of a different model from the old *Globe*. The last was one of those floating boxes which, in accordance with the old saw, seem "built by mile and cut off to suit purchasers." She was one of those whose bows appeared to be modelled after the cheeks of fat cherubs chiselled upon grave-stones in country church-yards, and seeming more capable of pushing away the ocean than cutting through it.

She was built for carrying a huge load, not for making quick passages. Her construction was the result of a plan to cheat the Custom House. Her capacity was great, and yet her registered tonnage was comparatively small. She was a mere box with the edges pared off, and the upper portion of the sides "tumbling in" so as to give her but little beam, notwithstanding her broad-floor and wall-sides. She was rigged out as a bark, and has the credit of having made some of the most remarkably long voyages on record. We remember one of her trips from Liverpool to Boston in seventy-four days. On that voyage she brought over the ocean several hundred passengers, chiefly Germans. They had prepared themselves with provisions for one or two months, but when that time had elapsed, and the brig was still on the Grand Banks, they mutinied, fully believing that the passage had been intentionally lengthened, in order that the officers might speculate by selling them provisions.

The crew unslung their hammocks; the captain and officers gathered up their chronometers, quadrants, and log-books, and prepared to leave. Then one of the passengers, a locksmith, asked the malcontents who would bring them into port, if they drove away the crew and officers! This simple appeal brought them to their senses, for of their whole number not one could navigate. When she arrived in port the grass was longer and greener on her planks than it is now in our California valleys, and the crop of barnacles would have done honor to the back of a hundred barrel whale, or the upper crust of the fabulous kraken. She afterwards fitted herself against this voyage, and really beat her previous time, by whiling away seventy-five blessed days between Havre and Boston, on one voyage. She was a jolly craft for the sailors. They took a month's advance, and then had a pretty certainty of two months more being due when the voyage across the Atlantic was ended.

How she ever got around Cape Horn is a mystery. "She would beat her head against a billow three times, said her Mate to us once, "and then fall off and sail round it." This mate of the *Globe* was familiarly known as "Old Muck," and there are many now living who remember that mighty six-feet-two-inch frame. We remember one of his anecdotes of the old brig: "We were fourteen days out from Liverpool, when one fine morning we saw a vessel astern, hull down. By 11 o'clock she was within hailing

distance. 'Brig ahoy! what brig is that?' 'The *Globe*.' 'Where from?' 'Liverpool.' 'How long out?' 'Fourteen days.' 'God of dullness!' said the hailer, 'I left Liverpool day before yesterday! She went by us as a railroad car would pass a bullock," said Old Muck, "and before sundown she was hull down ahead of us, her white sails appearing like the hem of a cloud on the western horizon." Poor old Muck! Poor old *Globe!* All your voyages are ended.

After trying for years to get a little speed out of her, her owners rigged her into a bark. But whether with three masts or two, she was a sea-dunciad still, and like the dull ass, all the cudgelling by means of spankers and studding sails, could never mend her speed. What a contrast to the clippers of the present day! They would rattle along both sides of the continent, and be in port here before her plump bows could bang her way from the Hudson to the Mersey. She was an old fogy of the sea, a Rip Van Winkle on every voyage. How many years she took for her voyage hither, whether she beat the *Chesapeake* and the *McKim*, or dallied for months with some Flying Dutchman, we know not. She undoubtedly was in the "horse latitudes" all the time. She was a philosopher, and is one. She has taken life easy. And finding that she can no longer sail the waters, she disdains to be filled with them, and incontinently leaks out all which the Fire Department can pump in. She disdains to be a cistern.

It would be a study for any one given to reflection, to compare, or rather to contrast the model of that old vessel with any one of the beautiful clippers which so often visit our harbor. They are no more alike than are the swordfish and the cod. And a very good idea of the improvements in marine architecture during the last thirty years, may be had by such a comparison. The *Globe* is to the *Hurricane* what the old political systems of Europe are to our own Republic. They are of a decidedly clumsy model, made to bear huge burdens, Church, State and Army, while the *Model Republic*, the clipper *Flying Cloud* of the nation, has been built for a different purpose. She has beauty, strength and proportion, and speed follows as a consequence of model, rig and seamanship. The clipper Republic forever.—*California Chronicle.*

For the Nautical Magazine.

AN OLD SALT.

Messrs. Editors:—In your first number, I promised to prepare something for your next; but as the data for the article is not at hand, and as the article is of some interest to all who are unaccustomed to a sea voyage, (being on *sea-sickness*,) I will talk about something else this month, promising that the article referred to shall be forthcoming next month. With few exceptions, the world of mankind regard the daily routine of sea-life as dull and monotonous; few there are who can discover anything either sublime or interesting in the rounds of a watch or a voyage, or in those deep researches in which

science engages with such keen delight. The value of things is sometimes estimated by the amount of toil and suffering rendered necessary to obtain them; the genius of mechanism and commerce can never be properly appreciated within the orbitual circuit of that place we call *home.* It is reserved for those who navigate the mighty deep to measure the altitude of mechanism; the nautical astronomer, by the mechanic's aid, has made the ocean the theatre of his power; he mounts the deck of this thing of life, this *wind-inflated steed,* and, like the *proud eagle,* who *plumes his bony wings,* he spreads his canvas to the breeze, the magnet marks his course, when, with helm in hand, this mighty fabric bids adieu to earth; the lofty promontory dwindles down to an atom in atmospheric space, and is lost to human gaze; *islands* and *continents* hide their furrowed faces from the battlements of strife; and now, far from *home* and *friends,* the regal wrath of ocean is excited; *Boreas* and *Neptune* unfurl their angry banners, harness their dread engines of power, and drifting surges are rolled against this seemingly *fragile bark* in all the fury of their unabated strength. Anarchy and confusion mark every pulsation of the infuriated watery waste; and this mistress of the mighty deep seems but as a *lap-dog in* the *jaws* of a *lion;* while man, the matchless master of both land and sea, mocks at *Neptune,* his relentless foe, and ploughs trackless furrows through his wide domain, tearing the ruffled spray from every mountain wave. In nature's arsenal, the ocean furnishes the most impressive exhibition of power and terrific grandeur known to man; and yet it is with these engines of power that the mariner must wage an uncompromising war.

We may read of the avalanche, earthquake, or volcanic fire, whose ascending flame and stream of lava leave the imprint of desolation in their track; but the ocean, when aroused in its chainless strength of storm and fury, shakes a thousand shores.

The tempest on the land is broken, shorn of its strength, and torn into fragments by the mountain's summit, the *craggy precipice,* or by the rock-rooted giant of the forest; but on the

ocean, it rolls up the *lubric* mass into mountain-crested billows, and hurls death at the defenceless bark.

The realms of savage or of civilized life have been worn down to oblivion by the tideless wave of time; still the *ocean's* unceasing roar admonishes the man whose home is on the deep, that genius alone rears the bulwark which separates time and eternity. Nor is the ocean wave the only peril of the mighty deep. The chilling breath of a polar clime congeals the angry foam until the towering mass-like *Alps* on *Alps* arise, when, from the summit of the glittering steep, the *mountain mass plunges* into the *ocean's* wide embrace, causing tumults among these drifting monuments of the mighty dead, and terror and dread to the defenceless mariner. But science, the champion of earth and sea, seeks refined revenge, harnesses his engines of flame and vapor, hurling defiance at both calm and storm. The mariner now measures his trackless course by days and hours, and time prepares her log-lines for the achievement of still greater victories over matter in the fluid and the vaporous form. The absent sons of the ocean are sometimes charged with being insensible to the sufferings of their fellow-beings: "as hardened as a sailor" is a proverbial expression among landsmen, when speaking of persons of confirmed habits, and yet no class of men are more alive to the miseries of their fellow-beings. The sympathies of seamen's bosoms are borne like the vessel he navigates on the briny deep. The gushings of philanthropy are not unfrequently indicated even when the thermometric scale is at zero by a flood of tears. Who of all the fraternity of those who live on shore, but a mother, can understand the language of the welcome or the parting tear? OLD SALT.

FATALITY OF COLLISIONS AT SEA.

The variety of opinions upon the subject of collisions has led us to make a few remarks upon the same subject. While some are impressed with the possibility of their avoidance, others have burdened their thoughts with the means of escape from their fearful consequences. We are among the latter class, and

would add to those well-timed remarks of the Rev. Mr. Beecher, published in the *New-York Independent*, that the number of collisions must inevitably increase, as the orbit of commercial operations widens. We deem his remarks, to which we give publicity, well worthy the attention of men of every class :—

"It is impossible to provide effectually against collisions at sea. Our blood runs cold to-day at the remembrances of a steamer crossing the bows of a sailing vessel that bore us to Liverpool, so near that three minutes later a collision would have been inevitable; and yet she passed like a grim phantom in a fog, a black hull and a red pipe faintly looming athwart our bows at a distance of only twice the ship's length, while in her watch our vessel was probably invisible. We heard her paddles, and the roar of the sea as it parted before her ponderous bulk; we heard the tolling of her bell as from a phantom-ship; her direction and her progress could only be guessed by sound; but we *felt* that invisible power that might in an instant crush and overwhelm us, drawing nearer and nearer, while the tolling of our bell, scarcely audible above the noise of her own motion, could hardly convey to her a warning of our presence.

"At length she passed in the fog—no longer a phantom—but a thing of life urging her resistless way through the dense vapors with a fearful precision. We never knew her name or destiny. How easily might both ships, each to the other unknown, have sank into the depths of the sea by unavoidable collision! But here we are, by God's mercy to record our narrow escape from that which has befallen six hundred of our fellows. These possibilities are fearful to contemplate while sitting quietly in our own study; but *how* fearful while lying wakeful in one's berth at sea, or groping the deck in a dripping fog! And yet, with all the possibilities of calamity by collision, by storm, by iceberg, or by fire, that are inseparable from the navigation of the ocean by steam, that navigation is *safer* than railroad travel in the United States.

"The confluence of sorrows from Lake Erie and the Atlantic has made the heart of this metropolis reel under the thought of a Providence so vast and so terrible in the reach of its visitations.

"We had come to count too much upon our safety; to regard our steamers as masters of the sea; and to talk of their achievements with a confidence almost presumptuous."

Calculate as we may, it is quite time that the voyagers on the Atlantic and Pacific Oceans should know their danger. It is time to listen to the voicings of desolate hearth-stones. It is time that the New-York underwriters, who have paid twelve millions of dollars insurance within a single year, should speak. It is no less proper that the ship-builders should be heard in their inquiries, and learn from public sentiment whether they are to be regarded as *undertakers* in all that pertains to *closeting* the mortal remains of suffering humanity on the mighty deep.

We are audibly admonished that the foot-fall of Time has brought us to an era when it is incumbent on the genius of phi-

lanthropy to provide for a contingency which human skill cannot prevent. Inspired by a fearful contemplation of the disasters which, alas, but too soon have occurred, did we urge the necessity of iron internal casements in passenger vessels, at every convenient season within the past two years, which would prevent the vessel from foundering; or if on fire, so to enable the crew to confine and control its ravages, that the lives might all be saved, even in mid-ocean. This is what we would recognize as a life-boat, commending itself to merchants, mariners, and underwriters, as well as to the travelling community, who are equally interested in rendering the *ship itself a life-boat* by a law of Congress, if necessary.

For the Nautical Magazine.

MAKE THE SHIP A LIFE-BOAT.

The present age is remarkable for almost everything but furnishing security to human life. In our eager haste to make money, we are too apt to forget that the most valuable portion of our freight is *human life*, and only because the merchandise cannot be saved without the officers and crew, are we induced to provide means for their preservation on ship-board; beyond this our efforts cease. The very idea of abandoning a vessel at sea, unless on fire, should produce an involuntary exclamation of reproach. How afflicting the thought that a *wife*, a *mother*, a *sister*, or *daughter*, should be compelled to abandon a ship amid the stormy Atlantic, perhaps in the depths of winter, and seek security in a fragile boat! We should think the females themselves would enter their protest against such provisions for their comfort when travelling by sea; and if the lords of the creation were bent on maintaining that the life-boat is the best protection they can afford, themselves to undertake the invention of such improvements in the construction of vessels as shall render the ship itself a life-boat.

Messrs. Editors, if you think this letter worthy of a place in your Magazine, you will please correct the errors, and give it a place.

I remain, progressively,

Very respectfully yours,

YOUNG AMERICA.

PORTS AND HARBORS OF JAPAN.

SAILING DIRECTIONS FOR NAPHA ISLAND, GREAT LEWCHEW, FROM SURVEYS OF JAPAN EXPEDITION, BY ORDER OF COMMODORE M. C. PERRY.

This is the principal seaport of the island, and perhaps the only one possessing the privileges of entry. Its inner harbor has a depth from two to three fathoms, and is sufficiently large to accommodate fifteen or twenty "junks," which are usually found moored in it. These are mostly Japanese, a few Chinese, and some small coasting craft, which carry on a sluggish trade with the neighboring islands.

The outer harbor is protected to the east and south by the main-land, whilst in other directions it is surrounded by a chain of coral reefs, which answer as a breakwater, but afford no protection from the wind. The holding ground is good, and a well-found ship could ride out almost any gale in safety.

The nearest approach from the westward is by passing to the north of the Amackarina Islands, and sighting Agenhue Island, from whence steer S. E. for the harbor, passing on either side of Reef Islands, being careful not to approach them too near on the west and southern sides, as the reefs in these directions are said to be more extensive than is shown by the charts. After clearing Reef Islands, bring Wood Hill to bear S. S. E. when standing down for it, until getting upon the line of bearing for South Channel. This will carry you well clear of Blossom Reef, yet not so far off but that the White Tomb and clump of bushes south of Tumai Head can be easily distinguished. An E. N. E. quarter E., or E. N. E. course, will now take you in clear of all dangers, and give a good anchorage near the seven fathom bank, about half a mile north and westward of False Capstan Head. This channel being perfectly straight, is more desirable for a stranger than Oar Channel, which, though wider, has the disadvantage of being crooked in the midst of reefs, which are nearly all below the surface of the water.

To enter by Oar Channel, bring the centre of the island in Junk Harbor (known by the deep verdure of its vegetation), to fill the gap between the forts at the entrance of Junk Harbor,

and steer a S. E. half E. course until Capstan Head bears E., when haul up to E. N. E., and anchor as before directed.

The North Channel is very much contracted by a range of detached rocks making out from a reef on the west side, and should not, under ordinary circumstances, be attempted by a stranger, as at high water the reefs are almost entirely covered, and it is difficult to judge of your exact position, unless familiar with the various localities and landmarks.

To enter by the North Channel, bring a remarkable notch in the southern range of hills, in line with a small hillock to the eastward of False Capstan Head, and stand in on this range S. by E. half E., until Tumai Head bears E. half N., when open a little to the south and select your anchorage. There is a black spar buoy anchored on Blossom Reef, half way between its extremities, a red spar-buoy on the point of reef to the W. N.-westward of Abbey Point, and a white spar-buoy on the southeast extremity of Oar Reef. Flags of corresponding colors are attached to all these buoys, and they afford good guides for the South and Oar Channels. There are two large stakes on the reefs to the east and west of North Channel, planted there by the natives, this being the channel mostly used by junks trading to the north. An abundance of water can be obtained at the fountains in Junk River, and the landing is excellent for boats.

The spar-buoys above described were securely moored at the time of being placed in their respective positions, but may subsequently be displaced or removed by the heave of the sea, or by the natives, and should not, therefore, be entirely relied upon.

(*To be continued.*)

Additional Life-Boats for the Collins Steamers.—The owners of the Collins steamships have decided to furnish each of the ships with five additional life-boats.

Each ship will now have eleven life-boats, including the old ones. The new boats ordered are of the largest class, and will be nested on deck, and so prepared that they can be put afloat and equipped in twenty minutes. Each boat is to be numbered and have a crew attached, also numbered or ticketed. They are to be fully equipped with mast and sails, and water and provisions. The Cunard line are also being supplied with additional life-boats from the same establishment.

QUICK PASSAGES.

The clipper ship Water Witch, of Boston, Captain Plummer, from Callao, arrived at this port yesterday morning, via Hampton Roads; she made the passage in 64 days to the latter place. Captain P. reports being in field ice from the latitude of 52° to 46°, on the 31st of August.

The clipper ship Typhoon, Captain Samuel Goodhue, at Calcutta, from London, is said to have made the run from Lizards in 80 days.

The ship Spark of the Ocean, Captain Comery, arrived at New-Orleans bar in ten days from this city.

The clipper ship Red Jacket arrived in the Mersey on the morning of Sunday the 15th, with advices from Melbourne of August 1st, having accomplished the return trip in 78½ days, notwithstanding having lost some time in the ice.

The Red Jacket made the run out, from the Mersey to the anchorage at Melbourne, in 69½ days, thus completing the voyage from Liverpool to Australia and back in 5 months and 11 days, being the most rapid voyage ever made.

On their voyage out, the average day's work was 205½ miles—the smallest progress 50 miles, and her greatest 400 miles in 24 hours. On her return, average speed was 253—smallest day's run 31 miles—greatest, 376 miles.

The steamship Arabia spoke on the 22d ult., off Minehead, on her second day out, the clipper ship Lightning, Captain Forbes, from Melbourne, reported sixty-two days out. As she probably got into Liverpool on the 24th, she will have made the passage in sixty-four days, five days shorter than the trip of the clipper Red Jacket, lately arrived there. The Lightning, we believe, was one of the clippers built at Boston by Donald McKay, for Messrs. Baine's line of Liverpool and Australian packets.

The clipper ship Nightingale, Captain Mather, of the Pioneer line, and carrying the United States mails, has made a very quick trip to Melbourne from this city. She sailed hence at 7 o'clock on the morning of the 19th of May, with a fair but light wind, and on the morning of the 4th of August delivered her mails and files of the *New-York Herald* of the 19th May, at Melbourne, thus making the voyage from city to city in 77 days, or 75 days from pilot to pilot. The celebrated English clipper ship Marco Polo made the passage from Liverpool in 68 days, which we believe is the shortest made by any sailing vessel from Europe. Lieutenant Maury, as well as some experienced shipmasters, assert that Liverpool is at least ten days nearer than New-York, owing to the prevalence of more favorable winds, thus making the Nightingale's passage the shortest ever accomplished by a sailing vessel from either America or Europe.

Quickest Passage from Liverpool to Hong Kong.—The clipper ship Comet, Captain Gardner, built by William H. Webb, of New-York, left her anchorage on 16th June, 1 P. M., and anchored in Hong Kong, 9th September, 1 P. M., making 84⅔ days, mean time, from anchorage to anchorage, and 83⅞ days from pilot to pilot. She sailed in straight course, from noon to noon, 17,500 geographical miles, averaging about 215 miles per day. The best day's run was 350 miles, geographical. *Not a sail, spar, or rope was lost on the passage.*

An Old Vessel.—Schooner John, which sailed from Boston November 2, for Jonesport, Me., was built in Salem, Mass., in 1802, and is consequently fifty-two years old.

NOTICE TO MARINERS.

POLLOCK RIO LIGHT SHIP, about 120 tons, 84 feet long, with 2 masts, 1 lantern with eight lights with reflectors, mast heads painted white, a hoop iron day mark at each mast head, painted red, rail above water 8 feet 7 inches, height of lights above water 34 feet 9 inches, mast heads above water 54 feet; from planksheer to the rail, she is painted cream color, with words Pollock Rip painted with large black letters on each side; from the upper edge of the copper to the planksheer, painted alternately red and cream colored squares. This boat is a new one, and will for the time relieve the one on the Pollock Rip, which is to come in for repairs.

ADDITIONAL LIGHT ON VIGNA ISLAND, KATTEGAT, COAST OF SWEDEN.—Official information has been received at this office that the Swedish Government has given notice that, on the 1st September ult., an additional fixed light, varied by flashes at short intervals, was exhibited on Vinga Island, in the Kattegat, on the coast of Sweden. The new light tower is placed in a N. E. half N. direction by compass, distant 400 feet from the old Vinga Light-house.

The light is of the fourth order. It stands at a height of 87 feet above the sea, or at the same level as the present fixed light, and is visible all round the compass.

In connection with the above, the light on Buskar Island, which lies two and a half miles to the eastward of Vinga, has been altered so as to appear red to seaward, but continues bright towards Vinga Sound.

A new Light Vessel, painted red, with "Sandy Hook" in large white letters on each side, has taken the place of the old vessel, (painted black,) heretofore occupying the station off Sandy Hook. She is all red above the water, has two masts, with a round iron day mark at each mast head, and shows two fixed white lights, each composed of eight (8) twelve (12) inch parabolic reflectors and lamps, forty-two (42) feet above the water, which may be seen from a vessel's deck, under ordinary states of the atmosphere, twelve (12) nautical miles. Highland Lights, S. W. by W. per compass, 6¾ miles; Sandy Hook Light, West per compass, 6¾ miles. Per order of Light House Board.

THE CURRENTS ON THE COAST OF LONG ISLAND—NOTICE.—I am directed by the Superintendent of the Coast Survey to make a series of observations and experiments on the set of the currents along our coast, from Gay Head, along the south side of Long Island, to Sandy Hook. A part of these experiments consists in throwing overboard a large number of bottles at stated points, containing printed circulars. This notice is to call the attention of those residing on the coast to this matter, and to request they will (on finding any of these bottles) be pleased to comply with the request contained in the circulars. As an accurate knowledge of the set of the currents along our shore enhances the safety of commerce, and an immense amount of life and property, it is confidently hoped the aiding so humane an object will be inducement sufficient to warrant the belief that this notice will receive, from those addressed, full and ample consideration.

MAXWELL WOODHULL,
Lieut. Commanding U. S. N. Asst. Coast Survey.

NEW HARBOR LIGHT OF ASSENS.—London, October 4, 1854.—The New Harbor Light of Assens was lighted for the first time on Sunday evening, the 1st instant, half an hour after sunset.

The Tower from which the Light is exhibited is placed on the Northern Mole, 26 feet from its outer end, and is painted white.

The height of the flame over the ordinary level of the sea is 20 feet.

Beacon on the Island of Hekkingen.—Christiana, September 20, 1854. —In the island of Hekkingen, at the entrance of the channel leading to Tromsoe, through the Melangen Fiord, is erected a day mark in the form of a wall, the breadth of which at the base is 24 feet, and at the top 16 feet, and the height 32 feet.

The mark is painted of a light color, and exhibits its greatest front directly towards the in-sailing, or in a N. W. direction, according to true compass.

Lon. East of Greenwich, 17° 51′, lat. N. 69° 36′. Height above high water, 300 Norwegian feet, and visible 8 to 10 miles.

Extension of Dock Yard Mole at Gibraltar, and a New Revolving Light on Cape Carson, Algeria.—H. M. Steam Vessel Beagle, at Sea, 18th September, 1854.—The Dock Yard Mole is in the course of being extended, and a Buoy is placed about a cable's length from the present Mole Head, to point out the extent to which stones are being laid down for that purpose; but as yet no notice has been issued to steam vessels that may be going to that port for coal, and, consequently, coming in at night may be attended with risk.

There is on the coast of Algiers a very fine Revolving Light on Cape Carbon, revolving once a minute, visible at a distance of 25 miles, but which is described on the charts as being a fixed red one, as well as in the Book or Mediterranean Lights, to which a note is appended, "that it is to be changed to a Light of the first class."

Sandy Hook Pilots.—At a meeting of the Board of Pilot Commissioners, held October 11, 1854, Russell Sturgis was re-elected President, and Francis Perkins, Secretary.

The Secretary presented an annual report for the year ending 31st August last, showing that out of 130 pilots licensed by the Commissioners since the law passed, 28th June, 1853, there are now in active service 116, that there are 20 cruising boats, and that there have been piloted during the year 5,104 vessels, viz., 2,885 inward, and 2,219 outward.

The present Commissioners (with but a single exception) were appointed some nine years since by the Chamber of Commerce and Board of Underwriters, and they feel gratified in being able to say that during that time few or no important losses have taken place when the property was under charge of pilots holding their licenses.

They also take pleasure in stating that the facilities and regulations given to the pilot business, under the late act of the legislature, appear to act with great harmony and satisfaction, both as to pilots, and the commercial interest generally.

The Commissioners would ask attention to the following sections of the State law:—

Sec. 13. When any ship or vessel, bound to the port of New-York, and boarded by any pilot appointed by this Board, at such distance to the southward or eastward of Sandy Hook Lighthouse as that said Lighthouse could not be seen from the deck of said ship or vessel in the day-time, and in fair weather, the addition of one-fourth to the rates of pilotage hereinbefore mentioned shall be allowed to such pilot.

Sec. 29. Any person not holding a license as pilot under this act, or under the laws of the State of New-Jersey, who shall pilot or offer to pilot any ship or vessel to or from the port of New-York by the way of Sandy Hook,

shall be deemed guilty of a misdemeanor, and, on conviction, shall be punished by a fine not exceeding one hundred dollars, or imprisonment not exceeding sixty days; and all persons employing a person to act as pilot, not holding a license under this act, or under the laws of the State of New-Jersey, shall forfeit and pay to the Board of Commissioners of Pilots the sum of one hundred dollars.

Commissioners.—Charles H. Marshall, Robert Taylor, E. E. Morgan, appointed by the Chamber of Commerce; George W. Blunt, Russell Sturgis, appointed by the Board of Underwriters.

DISCOVERY OF A ROCK IN LAT. 34° 51′ N., LON. 30° 12′ E.—Alexandria, August 30, 1854.—Sir:—I have the honor to call your attention to a rock discovered by me on the 12th instant, at 11, A. M., (civil time) which I found by good observation to be in lat. 34° 51′ N., and lon. 30° 12′ E. It is a very small rock, and had there not been a heavy swell on at the time, we could not have seen it. It is round in form, and has some weeds growing on the top; I passed within a ship's length of it.

(Signed) THOMAS WRIGHT,
Master of Bark Emma.

JOHN GREEN, Esq., H. B. M. Consul, Alexandria.

NORTH UNST, SHETLAND.—A Temporary Lighthouse is erected on Muckle Flugga, being one of the group of rocks called the Burra Fiod Holms, which lie off the headland of Hermaness, being the northern extremity of the island of Unst. The lighthouse is in N. lat. 60° 51′ 20″, and W. lon. 6° 53′ 3.″

The small rock called the "Out Stack," which is the most northern rock of the Shetland Isles, bears from the lighthouse about E. by E. ½ N. by compass, and is distant about half a nautic mile.

The North Unst Light will be known to mariners as a fixed light, of the natural color. It is elevated about 165 feet above the level of high water of ordinary spring tides, and may be seen at the distance of about 19 nautic miles, and at lesser distances, according to the state of the atmosphere.

A new Light-vessel, of about 250 tons burden, painted cream color outside, with the words "Minot's Ledge" painted in large black letters on each side, will be placed near Minot's Ledge, on or about the 25th of October, instant, to take the place of the Light-vessel now stationed there.

The vessel is about 102 feet long, 24 feet beam, rail 9 feet 6 inches above water, two masts, mast heads painted white, with a hoop iron day-mark at each mast head, painted red.

The mast heads are 61 feet above the level of the sea; hoop iron day-marks, 55 feet 6 inches. She is fitted with two lanterns, each having eight lamps and reflectors, and will show two lights 41 feet 6 inches above the level of the sea—one on each mast.

SCITUATE LIGHTHOUSE.—At the time of exhibiting two lights on board of the Minot's Ledge Light-vessel, the present red light at Scituate will be changed to a white light, (natural color.)

FIXED LIGHTS ON SCHIERMONNIK-OOG ISLAND, COAST OF FRIESLAND.—This office has been officially informed, that on this day, September 1st, 1854, two fixed lights will be established on the island named Schiermonnik-Oog, to serve as a guide for the adjacent coast, and the entrance of the Friesland Sea Gat.

Further information respecting these lights has been promised by the Netherland Minister of Marine.

The position of the lights appears to be in lat. 53° 28′ 48″ N., lon. 6° 9′ 53″ E.

Baltic, Gulf of Bothnia—Improvement of Holmo Gadd Light.—Official information has been received at this office that the Swedish Government has given notice that, on the 9th of August last, the fixed light on Holmo Gadd, in the Gulf of Bothnia, was changed from a coal light to an oil light with reflectors.

The light (which, as before, stands at a height of 72 feet above the level of the sea) is visible in all directions, except between the bearings of S. S. W. ⅜ W. Westerly to S. W. by W.

A stranger glare of light is thrown in the direction of the outer or South Gaddsnytan Rock, (only 5 feet,) from which the light bears N. N. E. ½ E., distant one mile and a quarter.

The Lighthouse stands in lat. 63° 35′ 50″ N., lon. 20° 46′ E. from Greenwich.

A Lens Light of the fourth order has been substituted for the Reflecting illuminating apparatus at the Old Point Comfort Lighthouse, Va.

The new light is of the same character as the old one, viz.: fixed white, and differs from it only in having greater power and brilliancy.

The elevation of the focal plane is 45 feet above sea level, and under ordinary states of the atmosphere, the light will be visible at an elevation of 10 feet above the water, 11½ nautical, or 13 English miles.

The re-buoyage of the channels leading into the Bay, and towards the city of New-York, has been completed. Nun Buoys mark the Gedney and main ship channels round the S. W. Spit up to the city.

Can buoys mark the South Channel of the Bar, and Swash Channel to the main ship channel.

Spar buoys mark the East and Hook Channel to the main ship channel.

Red buoys, with even numbers, must be left on the starboard hand, and Black buoys, with odd numbers, on the port hand on entering the channels from sea.

Black and white perpendicular striped buoys mark mid-channel, and may be passed either side.

Red and black horizontal striped buoys mark obstructions, and may be passed either side.

Light on the Coast of Norway.—Christiana, 6th September, 1854.—The following lights will henceforth be lighted on the 1st of October to the 1st of April, in the morning.

During this period they burn, from the 1st of October to the 20th March, from half an hour after sunset to sunrise; and after the 21st March, from one hour after sunset to sunrise.

Vigholm's Light, lon. E. of Greenwich, 5° 17′ 20″, lat. 59° 8′ 40″.
Fieldo's Light, lon. E. of Greenwich, 5° 35′, lat. 59° 5′ 25″.
Buknesund Light, lon. E. of Greenwich, 5° 29′, lat. 59° 13′ 15″.
Eyletta's Light, lon. E. of Greenwich, 5° 8′, lat. 59° 25′ 40″.
Esprœr's Light, lon. E. of Greenwich, 5° 10′ 5″, lat. 59° 35′ 5″.

A buoy boat has been placed on the N. end of Bass Rip, in 5 fathoms water, Sankaty Head Lighthouse bearing (per compass) W. ½ S., distant about three miles.

There has also been one placed on the S. end of Great Rip, in 5½ fathoms water, Sankaty Head Lighthouse bearing (per compass) N. W. ½ W., distant about 14 miles.

Both boats are painted white, with large red letters on both sides of each; the one "Bass Rip," and the other "Great Rip."

DISASTERS AT SEA.

(*Continued from page* 126.)

SCHOONERS.

Unknown, 80 tons, Oct. 3, seen by str. Kennebunk, off Bombay Hook, sunk.
H. B. Foster, Machias to Mickford, Oct. 3, ashore on Connimicut Point.
M. B. Mahoney, Phila. to Boston, ran into Holmes' Hole, sails split.
Moza, Phila. to Bristol, Sept. 10, thrown on beam-ends, lost deck load.
Walkulla, with lumber, ran on Great Point Rib, got off without damage
Achland, from Norfolk to New-York, ran back to Norfolk in distress.
Abby, Norfolk to Providence, Sept. 10th, lost foresail off Cape Henlopen.
Almatia, destination unknown, Sept. 10, dismasted; repairing at Newport.
S. N. Smith, St. Mary's, Georgia, to New-York, with naval stores, lost deck load, mainmast, and all sails, foremast condemned.
Jane, Baltimore to Nassau, dismasted, ran into Charleston for repairs.
Sarah Frances, St. Domingo to Boston, with mahogany, at St. Domingo got ashore, vessel total loss, part of cargo and tackle saved.
Franklin, Phila. to Manchester, coal, ashore at Holmes' Hole, got off.
Mary D. Hayton, Georgetown to New-York, with naval stores, off Georgetown, seen by sch. Sunny South lying partly on her side.
J. H. Johnson, Wilmington to Nassau, lost house and deck load.
J. H. Wilson, for Wilmington, arrived with four feet water in her hold.
Leopard, from New-York to Quebec, anchored at Holmes' Hole, parted cable, and cut away foremast, after storm, stepped it.
Catharine Hall, New-York to Matagorda, ashore at Bull's Bay.
John P. Brown, Charleston to Phila., ashore at Lockwood Folly, N. C.
North Carolina, Salem to Phila., Sept. 11, struck by lightning.
Mary and Frances, from Boston to Phila., Sept. 10, lost main boom and gaff, with sail and wheel, stove bulwarks.
S. H. Holmes, Wilmington to Phila., naval stores, Sept. 8, ashore at Racoon Keys, a total wreck.
Delaware, Newark to Boston, Sept. 10, ran into Edgartown, lost foresail and bulwarks.
Aid, from Newark to Boston, sunk in Vineyard Sound; hull sold in Boston for $77.
Mary Fletcher, from East Port to Baltimore, lost boat and deck load.
Caroline Grant, Phila. to Boston, lost boat, galley, sails, &c., put into Holmes' Hole.
Cardelas, Boston to Phila., in ballast, Sept. 10, dismasted, abandoned, full of water.
Acklam, Phila. to Boston, lost deck load of coal.
B. Penniman, Bangor to South Dennis, ran into, Sept. 16, by brig C. Henry, lost bowsprit, b warks, rail, and leaking badly.
Glen Roy, Gardiner, Me., lumber, Sept. 11th, off Nantucket, dismasted.
Caroline Booth, dismasted, deck ripped up, and filled.
Brutus, flour and grain, at Holmes' Hole, lost part cargo.
Jade, flour and grain, ashore at Holmes' Hole.
Braganza, ashore at Holmes' Hole, discharging.
Napoleon, ashore at Holmes' Hole, discharging.
Zephyr, corn, ashore at Holmes' Hole, sunk.

Willow, Rockland to New-York, at Edgarton Harbor, ashore.
G. A. Hobart, Saco to New-Bedford, bricks, Sept. 10, lost masts.
Unknown, Sept. 19, at Block Island ashore, deeply laden.
Isabella, of Machias, Me., Phila. to Lynn, coal, ashore at Block Island.
Madonna, of Prospect, coal, Block Island, ashore.
John Adams, for Providence, Sept. 5, at Holmes' Hole, lost masts, boats, and bulwarks.
Unknown, about 150 tons, seen near Frying Pan Light, bottom up.
Dolphin, New-York to Quebec, lat. 47, lon. 17, Sept. 10, stove bulwarks and house, lost sails, sprung aleak.
Ann, Eastport to Alexandria, Va., Sept. 10th, lost deck load and sails, leaking 1,000 strokes.
St. Lawrence, Matanzas to Boston, Sept. 10, off Nantucket, sprung aleak.
Hezron, Phila. to Newport, Sept. 10, shifted cargo, lost deck load, sprung aleak.
Perseverance, Phila. to Boston, dismasted, towed into port.
Fessenden, Phila. to Boston, lost deck load.
E. H. Herrick, Woodbridge, N. J., to Boston, lost deck load.
Silas Wright, Rockland to New-York, ashore at Hell Gate.
Independence, Thomaston to New-York, since ashore at Old Field Comfort.
Yorktown, Charleston to Baltimore, lost deck load, fore-topmast, and some sails, and was run into by another vessel unknown.
Statesman, of Camden, corn and flour, wrecked on Block Island.
Trident, New-York to Portland, pork, flour, &c., ashore on Block Island.
Eben Herbert, of Boston, ashore on Block Island.
Echo, New-York to Saltillo River, at Wilmington, lost sails, leaking.
Smith, for New-York, naval stores, Sept. 11, at Georgetown, lost masts, deck load.
Elizabeth, of Mystic, New-York to Newport, Sept. 9, near Newport, ashore.
Marietta, New-Orleans to New-York, lost sails, part deck load, leaking.
Koret Hall, Saco to New-Bedford, lost 14,000 bricks, leaky.
Caroline, for Jacksonville, lost sails, leaky.
Angenett, Nassau to New-Bedford, timber, lost masts, at Charleston.
Dirago, Jacksonville to Washington, lumber, Sept. 8th, abandoned.
Gazelle, Baltimore to Pernambuco, ashore.
Baltimore, Portland to New-York, a complete wreck.
Game Cock, ran into by a steamer, damaged.
Mary D. Scott, Phila. to Charleston, lost boat, bulwarks, sails, leaky.
Ellen Randall, Charleston to Wilmington, ashore, cargo lost.
Virginia, Savannah to New-York, lumber, abandoned.
James F. Bertine, Salem to Phila., Sept. 5th, at Norfolk, sails and rigging gone.
John Adams, bound to Provincetown, lost masts near Bermuda.
Company, ashore at Rumbey, near Savannah.
Cotton Plant, ashore at Rumbey.
James, ashore at Rumbey.
Augustus, ashore at Rumbey.
W. D. Jenkins, ashore at Rumbey.
Mary D. Scull, from Phila. to Charleston, Sept. 7 and 8, at South Edisco, lost sails, leaky.
Louisa, Machias Port to Providence, Sept. 9, lost anchor and cable, sprung mast.
Worcester, Phila. to Providence, Sept. 10, off Montauk, sprung aleak.
Unknown, ashore at Cape Hatteras.

DISASTERS TO AMERICAN SHIPS.

(REPORTED FOR THE PAST MONTH.)

SHIPS.

Ship Walpole, of Boston, for Calcutta, July 28th, put into Mauritius leaky.
Charles and Jane, of Bath, Me., stranded on the coast of Sweden, saved.
Goodwin, London to Calcutta, Aug. 18, ashore at Kedgeree, total loss.
Pollock Rip Light Boat, arrived at New-Bedford, Oct. 21, for repairs. Total number of vessels passed the Pollock Rip, 1st July to 1st Oct., was 5,974.
American Union, at New-York, from Liverpool. Oct. 24, ashore on the Knoll.
Edgar P. Stringer, at New-York, from Havre, lost all spars above head of foremast, also main-topmast and minzen top-gallant mast, &c.
Ariosto, Sumatra, for Boston, lost, on 31st July, off east coast Africa.
John Rutledge, ashore on East Hoyle Bank, near Liverpool, was saved.
Canton, at Antwerp, lost two anchors and chains.
Game Cock, Shanghai to New-York, put back, leaky, to discharge and repair.
Flora McDonald, at New-York from Havre, lost top-gallant masts and sails.
Hibernia, Phila. for Liverpool, was wrecked near Indian River.
Boston Light, at Boston, Liverpool, lost topmasts, fore top-sail yard, and sails.
Jane D. Cooper, at New-York, from Bristol, England. Oct 5, lost main top-sail yard and sails.
Unknown, part of the wreck seen, on the 31st ult., off Cape May.
Georgia, from Newcastle to Boston, abandoned on 6th Oct., lat. 42 50, lon. 45 50.
Canton, New-Bedford, lost on 5th March, on reef in China Sea, lat. 22 40 S., lon. 173 W.
Iconium, seven days from New-York, ran ashore on Loo Key in 8½ feet water.
Kate Swetland, at New-York, from Cardiff, damaged head and cutwater.

Unknown, Amer. ship, ashore near Harbor Island, Bahamas, previous to 26th Oct.
A ship seen, Sept. 22, in lat. 45 20 N., lon. 51 W., waterlogged, with loss of some spars.
Lady Arabella, Mobile to Marseilles, Oct. 21, ran into Key West in distress, leaking badly.
George Law, Matanzas, &c., to Amsterdam, seven miles west of Beachy Head, in collision, Oct. 18, with a foreign brig.
Niagara, Quebec to New-York, went ashore in Hudson Bay.
Golden West, (clipper,) Philadelphia to San Francisco, off Cape Horn, 20 days, lost sails, &c.
Sally Ann, (whaler,) of New-Bedford, lost at Vanoa, one of the Friendly Islands, on 2d of April.
A vessel, 500 tons, seen Oct. 27, lat. 42 7, lon. 52 17, waterlogged, and masts gone.
Alexandrine, Liverpool to New-York, Oct. 6, lat. 43 59, lon. 18 04, lost some spars and sails, and sprung aleak.
Frank Johnson, Calcutta to Boston, Oct. 21, lat. 29, lon. 65, lost some spars, sails, &c.
Alexander, Calcutta to Boston, Oct. 21, lat 29, lon. 64, lost main top-gallant mast.
A ship was seen, Oct. 31, lat. 43 20, lon. 55 26, totally dismasted.
Panama, from New-York, at Bremen, got adrift, and grounded, was not much injured.
Canton, (whaler,) wreck on a sand-bank, S. lat. 22 40, W. lon. 173.
Brother Jonathan, Liverpool, for Charleston, in collision with a vessel, and afterwards got ashore at north entrance of Strangford Lough, Scotland.
Tecumseh, Quebec, for Shields, in collision with the Dart, damaged top-masts.
Triton, Glasgow, for Boston, foundered, Oct. 13, lat. 44 52, lon. 4 55, crew saved.
Goodwin, at Calcutta, a total wreck.
Iconium, New-York, for New-Orleans, ashore on Loo Key, Fla., got off again.
Unknown, fore and mizen masts gone, vessel on fire, and abandoned, N. lat. 48 47, W. lon. 13 40.
Canton, Antwerp, for New-York, Oct 7, N. lat. 48 10, W. lon. 9 30, lost sails and some spars.
New Era, Bremen, for New-York, wrecked near Sandy Hook, over 300 lives lost.

BARQUES.

Mary Spring, Laguna, for Liverpool, logwood, at New-Orleans, leaky.
Unknown, Oct. 3, in lat. 28, lon. 63, seen, bottom up.
Catherine Augusta, hence to St. Thomas, lost spars, sails, and rigging.
Goldhunter, of and for New-York, Matanzas, Sept. 27, ashore on Memory Rock.
Edward, of New-York, Wilmington to St. Domingo, dismasted, and condemned.
Kesia, Boston, ashore at St. Domingo, crew, cargo, outfit saved.
Jacob B. Lancaster, New-York, Malaga, 16th Oct., lost fore and main masts.
Peter Hattrick, Antwerp to New-York, parted cables in Tunense.
Young Turk, at Boston, Malaga, Oct. 15th, stove bulwarks, rail and planksheer.
Brunette, Havana for Marseilles, in Bermuda, lost part cargo.
George and Henry, at Valparaiso, Aug. 15th, parted cables in collision with ship Sea Witch.
Agenoria, abandoned at sea, 283 tons; value, $10,000.
Unknown, 350 tons, dismasted and abandoned, seen Oct. 7th, lat. 44, lon. 55 40.
Venus, Curacoa, 10th Sept., got on the reef, lost rudder, discharged cargo.
Pacific, Havana to New-York, 29th Sept., shipped sea, lost deck load.
Asa Packer, Moreton Bay, for London, put into Sydney, N. S. W., June 17th.
Reindeer, at Boston, London, lost main top-gallant mast, 17th Oct., lat. 47 54, lon. 14 30.
Esther, of Orleans, in gale, Sept. 14, at Fayal, parted chains, and went ashore.
Howland, Boston, 18th ult., for Rio, lat. 28 11, lon. 63 22, hurricane, E. N. E., lost topmasts.
W. T. Sayward, put into Rio to repair damages, in N. W. gale, lost deck load.
White Cloud, New-York, for Bahia, returned to port damaged in gale 23d Oct.
Gov. Carver, whaler, of Westport, returned to port loss of topmasts in a gale 24th Oct.
Kate Hastings, at Boston, Calcutta, in lat. 28 N., lon. 64 W., lost top-gallant masts, sails.
Storm, at New-York, from Manilla, 21st Oct., dismasted in a hurricane.
Warren, at Providence, Oct. 22, lat. 30 07, lon. 68 08, hurricane, lost sails, boat.
John Winthrop, at Boston, Oct. 21, lost topsails.
Eastern Belle, for York River, Va., ashore on Cape Henry Beach, 30th Oct.
Charlotte Wynns, New-York, for St. Mark's, wrecked at Eleutheria.
Hadley, at Baltimore, Boston, in contact with unknown schr., damaged.
Thomas B. Bertram, Bristol, Eng., to New-York, lost some spars, and otherwise damaged.
Johanna, Hamburg, for New-York, lost spars, &c.
Alice Tarlton, Cardiff, for Rio Janeiro, ran back, leaking badly.

BRIGS.

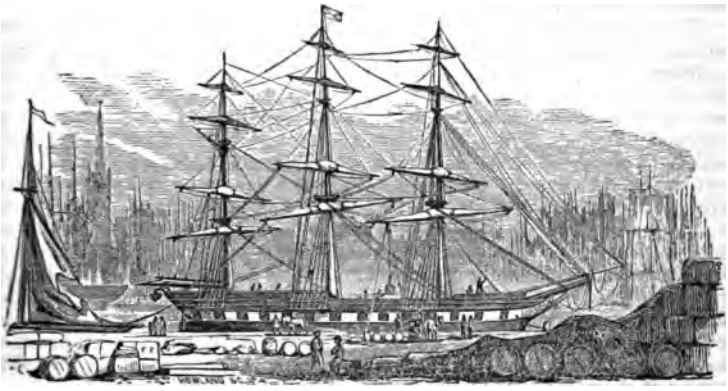
Harp, Baltimore to Monrovia, July 31st, beached, and was lost.
Choctaw, Rockland, wrecked on the coast of Texas.
Ann C. Pratt, ashore between Galveston and Sabine, total loss.
Arcadian, Charleston to Boston, Oct. 7, in lat. 35, lon. 74, lost part of deck load.
Pleiades, of and from Gloucester, struck on Bram's Point, and leaked.
Hueston, at Providence, from St. John's, N. B., ran into sloop Native.
Vesper, Lisbon, had heavy gales, lost sails, &c.
Queen Esther, from Phila. to Boston, at Holmes' Hole, 17th Oct., lost fore main-topmast
Commerce, of Philadelphia, lost main yard, spoken in lat. 42 35, lon. 68.
Unknown, lat. 36 3, lon. 34, seen dismasted, abandoned.
Bion Bradbury, at New-York, from Newport, England, lost fore top-gallant mast.
Unknown, seen, gone at tressel trees, steering for Cuba.
Borneo, at New-York, from Jacksonville, N. E. gales, sails rent, &c.
Rainbow, Doboy Island to Portland, lost on the 5th Oct., crew saved.
Adele, Phila., for St. Kitts, Sept. 3, capsized, crew saved, but one.

Margaret, New-York to St. John's, N. B., returned, lost topmasts, yards.
John Kendall, at Oporto, Quebec, upon Touro Rock, vessel and cargo saved.
Georgiana, at Wilmington, Camden, Me., lost boats, sails, &c.
Lydia, at Providence, Glasgow, 31st Oct., in distress, lost sails and rigging.
Francis Faber, at New-York, St. Jago, 27th Oct., Cuba, in Gulf Stream, was struck by lightning.
Cronstadt, at New-York, from St. Thomas. N. E., lost trysail and topsail.
David Duffell, from Darien, for Philadelphia, at Charleston, 30th Oct., sprung aleak.
Clement, Phila., for Boston, was ashore on Bulkhead Shoal. 3d Nov.
Harriet, at Providence, from Wilmington, 23d Oct. lost 8,000 feet lumber.
Geo. P. Mercer, from Belfast, lat. 33, lon. 76, consumed by fire, crew saved.
Waitstill, from Charleston, for Providence, Oct. 21, lat. 36 05, lon. 74 30, lost stern-boat and 7,000 feet lumber.
Cornelia, of Boston, lost on a key in the Caribbean Sea.
A brig, with lower masts standing, was passed on 3d Nov., in lat. 34 50. lon. 73.
Sarah, from Pictou, for Nantucket, 27th Oct., ran into Liverpool in distress.
Tiberias, from Boston, for New-Orleans, Nov. 7, ran into New-Bedford with foremast sprung.
Unknown vessel, 200 tons, seen Oct. 27, N. lat. 32 45, lon. 76 33, her name commenced " Com."
Commerce, of Boston, was passed, Oct. 25, 60 miles S. of C. Hatteras, abandoned.
Wm. D Shurtz, Alexandria, for Boston, Nov. 10, got ashore on south side of Cattehunck.
Gottmitten, Nov. 3, was seen, N. lat. 27, lon. 71, dismasted, and abandoned.
Unknown, was seen, Nov. 8, lat. 24, lon. 73, abandoned.

SCHOONERS.

Unknown, seen by brig Hollander, Sept. 13th, lat. 25 13, lon. 66 44 W., about 200 tons, wrecked.
Echo, Baltimore, for Rio, at St Thomas, 23d Sept., lost bowsprit and foremast, leaking.
Carro, Alexandria, for Boston, put into Norfolk, 17th, in distress.
Gen. Scott, Baltimore, for Antigua, Hampton Roads, 16th Oct., in distress.
Unknown, about 150 tons, Oct. 14, ashore eight miles S. of Body Island Light, crew saved.
Duck, Boston, for Cohasset, 12th Oct , lost masts, towed into Provincetown.
Chas. V. Lansil, Rhoades, for Bangor, put into Boston damaged by collision.
Sussex, at Baltimore, from Caribbean Sea, lost part cargo, guano.
Virginia, New-Haven, for Norwich, coal, on Stony Island, bilged.
Cabot, Alexandria, for Boston, put into Norfolk, in distress.
Victory, from Warwick, Va., for Boston, put into Edgartown 19th Oct., damaged, lost deck load.
Village Gem, at Baltimore, lost foremast, fore and main topmasts, and jib-boom.
L. Harrison, of and from Accomac, for Baltimore. run into by a steamer, crew saved. The steamer was injured, and ran ashore on Tilgham's Island.
Geo. C. Ackerly, Malaga to New-York, lost sails, galley, and spars.
Victory, Wilmington, for New-York, went over main bar, and got on shoal outside.
Ann Hayman, Beaufort, N. C., for New-York, sprung aleak, lost sails.
Signal, Delaware, for Boston, lost sails, and put into New-York.
D. W. Vaughan, Curatoman River, Va., for Providence, Oct. 42, at New-York, in distress.
Sheerwater, Boston, for Australia, Sept. 9, abandoned, and crew saved.
Lucy Ann, Philadelphia, for Salem, Oct. 18, lost galley and sails.
Mattapony, from Phila., for Boston, Oct. 22, struck on the Ice Breaker, and filled, crew saved.
Maria Jane, Wilmington, for New-York, 26th Oct., put back in distress, leaking.
Mechanic, Jacksonville, for Boston, arrived at Delaware Breakwater, 30th Oct., nearly full of water.
Gen. Hersey, at Providence, from Jacksonville, 19th Oct. to 23d, had lost boats and davits, and leaked.
J. Grierson, at New-York, from Mobile, gales the whole passage, split sails, &c.
Harriet, of Harrington, Me., Navy Bay, for Baltimore, in Cuba, sprung masts, leaky.
Henry B. Barnes, for New-Haven, put into Norfolk 31st Oct., cargo damaged.
Fawn, Caribbean Sea, bound to Baltimore, put into Mobile, 25th Oct., in distress.
A. L. Hyde, at Baltimore, from Eastport, lost deck load, laths, 24th Oct.
Martha, Kingston, for New-York, at Savannah, in distress.
Sarah Ann. seen sunk off Sharp's Island, 1st Nov.. with sails and rigging alongside.
Signal, 3d Nov., ashore on Chatham Bars, vessel leaking, and much injured.
Two Sisters, Wilmington, N. C., for Boston, struck a rock, put into Bedford, N. C., in distress.
Eliza Messerole, New-York, for Chickahominy River, Va., put into Norfolk on 7th Nov. in distress.
Ganges, Providence, R. I., for Jacksonville, Fla., 28th Oct., broke several beams, lost mainmast, &c.
Milwaukie, Jacksonville, for Providence, lost sails, &c.
Three Sons, Savannah, for Baltimore, lost sails, centre-board, deck-house, &c.
Unknown, ashore eight miles S. of Montauk Point, Nov. 6.
Mexico, Philadelphia, for Newport, Nov. 2, lost sails, and leaks badly.
Julian. New-Orleans, for Mobile, Oct. 20, leaking badly, transferred cargo to sch. Shepherdess, ran for a harbor.
Dolphin, Lackmel, for St. Domingo, Nov. 10, ashore on south side Cuttyhunck.
Unknown, of 90 tons, seen 7th Nov., sunk 12 miles N. of Cape Cod.
Foreigner, Souris, for Portsmouth, N. H., lost Sept 22, between New-Harbor and Torbay Point, N. S.
Perpendicular, Matagorda, for New-York, Oct. 27, ran into Galveston in distress.
C. Messerole. Nov. 7, ran into Norfolk, lost spars and sails.
Emma and Julia, Ashepoo, for Darien, Geo., about 1st Nov., wrecked near Doboy Bay, crew saved.

Commercial and Financial.



THE RECIPROCITY TREATY WITH THE BRITISH NORTH AMERICAN COLONIES,

Ratified at Washington, on the 9th of September, 1854.

ART. I.—It is agreed by the high contracting parties, that, in addition to the liberty secured to the United States Fisheries by the above-mentioned convention of October 20, 1818, of taking, curing, and drying fish on certain coasts of the British North American colonies, therein defined, the inhabitants of the United States shall have, in common with the subjects of her Britannic Majesty, the liberty to take fish of every kind, except shell-fish, on the sea-coasts and shores, and in the bays, harbors, and creeks of Canada, New-Brunswick, Nova Scotia, Prince Edward's Island, and of the several islands thereunto adjacent, without being restricted to any distance from the shore; with permission to land upon the coasts and shores of those colonies, and the islands thereof, and also upon the Magdalen Islands, for the purpose of drying their nets and curing fish: provided that, in so doing, they do not interfere with the rights of private property, or with British fishermen, in the peaceable use of any part of the said coast in their occupancy for the same purpose.

It is understood that the above-mentioned liberty applies solely to the sea fishery, and that the salmon and shad fisheries, and all fisheries in rivers, and the mouths of rivers, are hereby reserved, exclusively, for British fishermen.

And it is further agreed, that in order to prevent or settle any disputes as to the places to which the reservation of exclusive right to British fishermen, contained in this article, and that of fishermen of the United States, contained in the next succeeding article, apply, each of the high contracting parties, on the application of either to the other, shall, within six months thereafter, appoint a commissioner. The said commissioner, before proceeding to any business, shall make and subscribe a solemn declaration

that they will impartially and carefully examine and decide, to the best of their judgment, and according to justice and equity, without fear, favor or affection to their own country, upon all such places as are intended to be reserved and excluded from the common liberty of fishing under this and the next succeeding article, and such declaration shall be entered on the record of their proceedings.

The commissioners shall name some third person to act as an arbitrator or umpire in any case or cases on which they may in themselves differ in opinion. If they should not be able to agree upon the name of such third person, they shall each name a person, and it shall be determined by lot which of the two persons so named shall be the arbitrator or umpire in cases of difference or disagreement between the commissioners. The person so to be chosen to be arbitrator or umpire, shall, before proceeding to act as such in any case, make and subscribe a solemn declaration in a form similar to that which shall already have been made and subscribed by the commissioners, which shall be entered on the record of their proceedings. In the event of death, absence, or incapacity of either of the commissioners, or of the arbitrator or umpire, or of their or his omitting, declining, or ceasing to act as such commissioner, arbitrator, or umpire, another and different person shall be appointed or named as aforesaid to act as such commissioner, arbitrator, or umpire, in the place and stead of the person so originally appointed or named as aforesaid, and shall make and subscribe such declaration as aforesaid.

Such commissioners shall proceed to examine the coasts of the North American Provinces and of the United States embraced within the provisions of the first and second articles of this treaty, and shall designate the places reserved by the said articles from the common right of fishing therein.

The decision of the commissioners, and of the arbitrator or umpire, shall be given in writing in each case, and shall be signed by them respectively.

The high contracting parties hereby solemnly engage to consider the decision of the commissioners conjointly, or of the arbitrators or umpire, as the case may be, as absolutely final and conclusive in each case decided upon by them or him respectively.

Art. II.—It is agreed by the high contracting parties, that British subjects shall have, in common with the citizens of the United States, the liberty to take fish of every kind, except shell-fish, on the eastern sea-coasts and shores of the United States north of the 36th parallel of north latitude, and on the shores of the several islands thereunto adjacent, and in the bays, harbors, and creeks of the said sea-coasts and shores of the United States and of the said islands, without being restricted to any distance from the shore, with permission to land upon the said coasts of the United States and of the islands aforesaid, for the purpose of drying their nets and curing their fish: provided that, in so doing, they do not interfere with the rights of private property, or with the fishermen of the United States in the peaceable use of any part of the said coasts in their occupancy for the same purpose.

It is understood that the above-mentioned liberty applies solely to the sea fishery, and that salmon and shad fisheries, and all fisheries in rivers and mouths of rivers, are hereby reserved exclusively for fishermen of the United States.

Art. III.—It is agreed that the articles enumerated in the schedule hereunto annexed, being the growth and produce of the aforesaid British colonies of the United States, shall be admitted into each country respectively free of duty.

SCHEDULE.

Grain, flour and breadstuffs of all kinds.
Animals of all kinds.
Fresh, smoked and salted meats.
Cotton wool, seeds and vegetables.
Undried fruits, dried fruits.
Fish of all kinds.
Products of fish, and of all other creatures living in the water.
Poultry, eggs.
Hides, furs, skins, or tails undressed.
Stone or marble, in its crude or unwrought state.
Slate.
Butter, cheese, tallow.
Lard, horns, manures.
Ores of metals, of all kinds.
Coal.
Pitch, tar, turpentine, ashes.
Timber and lumber, of all kinds, round, hewed, and sawed, manufactured in whole or in part.
Firewood.
Plants, shrubs and trees.
Pelts, wool.
Fish oil.
Rice, broom-corn and bark.
Gypsum, ground or unground.
Hewn, or wrought, or unwrought burr or grindstones.
Dye-stuffs.
Flax, hemp and tow, unmanufactured.
Unmanufactured tobacco.
Rags.

ART. IV.—It is agreed that the citizens and inhabitants of the United States shall have the right to navigate the river St. Lawrence, and the canals in Canada, used as the means of communicating between the great lakes and the Atlantic, with their vessels, boats, and crafts, as fully and freely as the subjects of her Britannic Majesty, subject only to the same tolls and other assessments as now are, or may hereafter be, exacted of her Majesty's said subjects; it being understood, however, that the British government retains the right of suspending this privilege on giving due notice thereof to the government of the United States.

It is further agreed, that if at any time the British government should exercise the said reserved right, the government of the United States shall have the right of suspending, if it think fit, the operation of article III. of the present treaty in so far as the province of Canada is affected thereby, so long as the suspension of the free navigation of the river St. Lawrence or the canals may continue.

It is further agreed, that British subjects shall have the right freely to navigate Lake Michigan with their vessels, boats and crafts, so long as the privilege of navigating the river St. Lawrence, secured to American citizens by the above clause of the present article, shall continue; and the government of the United States further engages to urge upon the State governments to secure to the subjects of her Britannic Majesty the use of the several State canals, on terms of equality with the inhabitants of the United States.

And it is further agreed, that no export duty, or other duty, shall be levied on lumber or timber of any kind cut on that portion of the American territory in the State of Maine watered by the river St. John and its

tributaries, and floated down that river to the sea, when the same is shipped to the United States from the province of New-Brunswick.

Art. V.—The present treaty shall take effect as soon as the laws required to carry it into operation shall have been passed by the Imperial Parliament of Great Britain, and by the Provincial Parliaments of those of the British North American colonies which are effected by treaty on the one hand, and by the Congress of the United States on the other. Such assent having been given, the treaty shall remain in force for ten years from the date at which it may come into operation, and further until the expiration of twelve months after either of the high contracting parties shall give notice to the other of its wish to terminate the same; each of the high contracting parties being at liberty to give such notice to the other at the end of the said term of ten years, or at any time afterwards.

It is clearly understood, however, that this stipulation is not intended to affect the reservation made by article IV. of the present treaty, with regard to the right of temporarily suspending the operation of articles III. and IV. thereof.

Art. VI.—And it is hereby further agreed, that the provisions and stipulations of the foregoing articles shall extend to the island of Newfoundland, so far as they are applicable to that colony. But if the Imperial Parliament, the Provincial Parliament of Newfoundland, or the Congress of the United States, shall not embrace in their laws, enacted for carrying this treaty into effect, the colony of Newfoundland, then this article shall be of no effect; but the omission to make provision by law to give it effect, by either of the legislative bodies aforesaid, shall not in any way impair the remaining articles of this treaty.

Art. VII.—The present treaty shall be duly ratified, and the mutual exchange of ratifications shall take place in Washington, within six months from the date hereof, or earlier if possible.

In faith whereof, we, the respective plenipotentiaries, have signed this treaty, and have hereunto affixed our seals.

Done in triplicate, at Washington, the fifth day of June, Anno Domini one thousand eight hundred and fifty-four.

W. L. Marcy. [L. S.]
Elgin and Kincardine. [L. S.]

The Treaty just ratified between the high contracting parties is fraught with vast and important consequences, both to the United States and the British provinces. An immense increase of trade, wealth, and population will arise from the impetus which this liberal policy of international trade is calculated to communicate to the joint interests of all North America. The *freedom of the sea-fisheries, unshackled commerce,* and the *free navigation* of the St. Lawrence, the Canadian Canals and Lake Michigan, are the leading benefits secured to both countries by this Anglo-American Convention. The Reciprocity measure has been gathering momentum since its initiatory, about twelve years ago, and now meets a very popular and enlightened approval among our men of business, and is welcomed with en-

thusiasm by the people of the colonies. Hitherto placed between two fires, having but *one* market to cater for, from the ample, but dormant resources of a vast country, the British provinces have severely suffered in the development of population and prosperity; and now, casting off the threadbare mantle of prejudice, they wisely legislate for equal terms with the citizens of the United States for the disposal of the great staples of their production in our markets.

The territory of	Canada includes	400,000	square miles.
"	New-Brunswick	28,000	" "
"	Nova Scotia	19,000	" "
"	Prince Edward's Island	2,000	" "
"	Newfoundland	37,000	" "
	Total of square miles	486,000	

The population of the provinces in 1851 was :—

Canada	1,842,224	inhabitants.
New-Brunswick	200,000	"
Nova Scotia	300,000	"
Newfoundland	100,000	"
Prince Edward's Island	75,000	"
Total of inhabitants	2,517,224	

We may safely set down the population of these provinces to-day at 3,000,000 of hardy inhabitants, equal to one-eighth of the United States, whose consumptive wants are equally as numerous and various as our own, while their natural staples of trade are mainly the product of the fishery, the forest, and the mine, while the extensive productions of our country are not equalled by any in the world. An unrestricted trade with such a people must vastly increase when we open our markets for the exchange of products; and of inestimable value must it prove to them, to add another market to the single one possessed before the consummation of this Treaty. By the report of the Treasury Department, our exports to all the British provinces in 1853 amounted to 13,500,000 dollars, 3,000,000 of which went to Canada alone. But according to the returns of the same year submitted to the Canadian Parliament, near 12,000,000 of dollars went into that province from the United States, while we received from Canada about 1,000,000 dollars less. The exports of Canada to Great Britain fall a trifle be-

low the amount to the United States, but the imports from that kingdom reach near 18,500,000 dollars. The increase of the aggregate imports and exports over the preceding year was 57 per cent.

Of all the provinces embraced in the provisions of this Treaty, Upper Canada alone produces a surplus of grain, while in the lower province, New-Brunswick, Nova Scotia, and the islands of Newfoundland and Prince Edward, lying north of the forty-fifth degreee of north latitude, there is no corn raised, and scarcely a tythe of the other grains required for consumption, and, consequently, they have imported their breadstuffs from the United States. The very *farmers* of Nova Scotia and New-Brunswick, since the failure of the wheat crop five years ago, have bought their flour in our Eastern Atlantic markets.

The developed resources of forest and of mine, which will follow the consummation of the Treaty for reciprocal free trade, will largely increase the demand for the varied produce of our own country, since by receiving in exchange therefor the few staples, or their cash equivalent, if better markets are found abroad, we shall enable them to purchase double the amount they could afford to formerly. An immense ship-building, lumbering, manufacturing, mining, and fishing population will spring up in the eastern colonies, who, getting their money from England for their ships, timber and fish, will pay it out for food to the agriculturist of our Middle and Western States. The industry of British North America is indeed equally valuable to the United States and the Home Government. *Freedom of industry* is wisely becoming acknowledged as a sovereign right of humanity among enlightened nations.

The *freedom of the fisheries* which this Treaty secures is of very great importance to the United States, not only in the value of the piscatory interest, but in settling, we trust forever, the doctrine of the *Freedom of the Seas*. Since 1815, Great Britain has pursued no course so offensive to the sentiments, and so hostile to the interests of the American people, as that which excluded our fishermen from the great bays and sounds of the eastern coast, and also from the hospitality and shelter which common humanity dictates in behalf of the storm-driven

mariner. Foreign cruisers will no longer have any specious claim to board and search our manly and hardy fishermen, and no foreign official shall ever more be commissioned to tread the deck with insulting step over which the flag of the Union waves. The wrongs and abuses which the gallant fishermen have long suffered from the enforcement of the odious "Headland" doctrine in the northeastern seas, could not have been endured much longer without collision and violence. By the timely consummation of the Treaty all this is avoided.

The aggregate produce of the North American Fisheries is estimated at 30,000,000 dollars annually, distributed between the United States, the British Colonies and France.

The following table exhibits the tonnage of the United States employed in the Sea Fisheries, and the trade in fish for a series of years:—

Years.	Tonnage. Cod. Tons.	Tonnage. Mackerel. Tons.	Tonnage. Total. Tons.	Imports. Dried. Cwt.	Imports. Pickled. Pounds.	Exports. Dried. Cwt.	Exports. Pickled. Pounds.
1840	60,035	28,629	104,304	4,061	25,493	211,425	42,274
1841	66,551	11,321	77,873	2,422	18,012	252,190	36,540
1842	54,804	16,096	70,900	1,265	14,678	256,083	40,846
1843	61,224	11,775	73,000	2,640	12,334	174,220	20,198
1844	85,224	16,170	101,395	360	43,542	271,610	43,500
1845	69,825	21,413	91,238	1,297	30,506	211,425	42,374
1846	72,516	36,453	108,978	865	31,402	277,401	56,331
1847	70,177	31,451	101,628	8,274	91,113	258,870	30,976
1848	82,651	43,558	126,210	51,826	122,594	206,549	22,445
1849	73,882	42,992	116,874	22,520	138,508	197,457	25,570
1850	93,886	58,112	151,918	25,115	108,380	168,600	19,330
1851	95,615	50,539	146,154	14,765	145,368	151,088	21,214
1852	102,659	72,546	175,205	—	—	—	—
1853	109,227	59,850	169,077	—	—	—	—

In conclusion, we would observe, that the *free use* of the St. Lawrence River will yet confer an almost incredible benefit to the trade of our great lakes and the vast territory of the West, which this channel of ocean communication will, at no distant day, open up to commence with Europe and the world. Our oldest and wisest business men look forward to the time when the course of trade will flow to a direct channel from the headwaters of the Mississippi, through the spacious basins of the lakes, directly forward upon the bosom of this noble river to the broad world outside, with the same ease and facility that it now passes from the seas of Europe to the expansive ocean.

Suitable improvements in the river and canal navigation will yet enable vessels of 1,500 tons to sail from Chicago to any port of the world, when that city will become the great Centre Mart of the West, and the London of America.

LAUNCHES FOR THE PAST MONTH IN THE UNITED STATES.

At Ellsworth, 7th inst., a brig called the Dunkirk.

At Fairhaven, 21st inst., a barque of 420 tons, called the Elizabeth Swift. She will be fitted for the sperm whale fishery.

At Mattapoisett, 21st inst., a ship of 700 tons, called the George Lee. She is intended for the freighting business.

At Essex, Mass., 20th inst., a schooner of about 250 tons.

At South Dartmouth, 23d inst., a barque called the Benjamin Cummings.

At South Orrington, 21st inst., a brig of about 300 tons, called the Itaska. There was previously a brig Itaska, and a barque Itaska.

At Port Jefferson, 23d inst., a schooner of about 250 tons, called the M. H. Read.

At Brookhaven, L. I., this week, a schooner of about 250 tons, name not mentioned.

At East Machias, 21st inst., a freighting ship of about 600 tons.

At Bath, 13th inst., a brig of 275 tons, called the Crimea.

At Warren, 7th inst., a ship of 800 tons, called the Georges.

At Mystic, Conn., 16th inst., a medium clipper ship, 356 tons, called the Elizabeth F. Willetts.

At Cherryfield, 9th inst., a copper-fastened barque of 320 tons, called the John Wesley. This makes John Wesley No 2. At the same place and time, a barque of 380 tons, called the Essex.

At Somerset, Mass., 18th inst., a herm. brig of about 300 tons, called the Ocean Wave.

At Tremont, Me., recently, a superior freighting ship of 700 tons—name unknown.

At Centreville, Barnstable, 26th September, a schooner of 175 tons, called the Nelson Harvey, for the freighting business.

At Wiscasset, 23d ult., a full-freighting ship of about 1,100 tons, called the Mackinaw.

At Rockland, 21st October, a barque of 456 tons, called the Sampson.

At Owl's Head, 21st October, a fore-and-aft clipper schooner of 283 tons—name not mentioned—intended for the Boston and Richmond trade.

At Belfast, 21st October, a ship of 900 tons, called the Wild Cat, intended for the Liverpool trade; 24th, a freighting ship of 1,000 tons, called the Mary McNear.

At Searsport, 23d October, a ship of 1,100 tons, called the Martin Luther.

At Rockport, Me., recently, a ship of about 800 tons, called the Borodino; and a schooner of about 190 tons, called the Sheet Anchor.

At Goodspeed's Landing, East Haddam, 28th ult., a barque of 650 tons, called the Goodspeed.

At Billing's Cove, Eastport, 24th ult, a barque of 280 tons, called the J. M. Morales.

At Lubec, 23d ult., a schooner of 150 tons, named the Emily Fowler. She is intended for a packet between Lubec and New-York.

At Mystic, Conn., 26th ult., a fine freighting ship of about 1,300 tons, called the Samuel Willets.

At Richmond, Me., October 25, 1854, from the yard of T. J. Southard, Esq., a first-class ship of 1,100 tons, called the Charlotte A. Stamler, owned by Jacob A. Stamler and Captain S. O. Williams, of New-York. She is intended for the general freighting business.

The steamboat Elm City, for the New-Haven Steamboat Company, was launched yesterday from the yard of Mr. Samuel Sneeden, at Greenpoint. She takes the place of the Traveller on that line.

At Searsport, 25th ult., a copper-fastened brig of about 270 tons, called the Iza.

At Newburyport, 28th ult., ship Charmer; she will load at Boston for San Francisco, in Messrs. Glidden & Williams' line.

At Ellsworth, 24th ult., a copper-fastened brig of 250 tons, called the Fredonia.

Near Richmond, Va., previous to 30th ult., a ship of about 800 tons burthen. She was towed to Baltimore to be fitted out with masts, spars, sails, &c.

At Farmingdale, Me., October 28th, a freighting ship of about 1,000 tons burthen, called the Vision.

A beautifully modelled barque, called the Charles C. Fowler, was launched from the ship-yard of D. B. Warner, Esq., at East Haddam, Conn., on Saturday last, 4th inst. She is owned by Messrs. Eagle & Hazard, of this city, and is intended for their Mobile line of packets. Captain Alfred Palmer, late chief officer of the ship C. Jerome, Jr., will command her.

At New-London, recently, a schooner of 300 tons, called the J. W., built to run between Boston and New-York.

In Bowdoinham, 31st ult., a ship of 1,050 tons, name unknown.

At Bath, 31st ult., a ship of about 1,300 tons, name unknown.

At Pettiquamscutt River, South Kingstown, 2d inst., a schooner of about 80 tons, called the Isaac P. Hazard. She is to be employed in the Southern coasting trade.

Ship Japan, of 2,000 tons, was launched 4th inst., from the ship-yard of Donald McKay, at East Boston.

Also, at East Boston, a ship of 1,000 tons, name unknown.

In New-York, the ship Cornelia Lawrence, from Messrs. Westervelts' lower yard, foot of Houston-street.

At Pembroke, Me., 4th inst., by Mr. James M. Lincoln, a beautiful barque of 350 tons, called the John Gilpin, for the Boston market.

At Waldoboro, November 6, from the yard of James D. Genthner & Co., a fine ship of 1,271 tons, called the E. Wilder Farley.

At Phipsburg, by Mr. Morrison, a ship of 500 tons, called the Lizzie Drew, owned by the builder, and James Cox and others, of Bath.

At Freeport, Me., 4th inst., by Messrs. G. & C. Bliss, a ship of about 900 tons, called the Sentinel, owned by the builders, and by Messrs. Soule.

At New-York, by Messrs. Westervelt & Co., from their yard at the foot of Eighth-street, East River, the fine ship Amazon, of about 1,800 tons burthen, for Griswold & Morgan's line Liverpool packets.

At Hoboken, by Messrs. I. C. Smith & Son, the schooner Americus, of 280 tons. Her dimensions are 100 feet keel, 28 feet beam, and 9 feet hold.

At Brewer, Me., 4th inst., a brig about 250 tons, called the War Eagle.

At Warren, R. I., 4th inst., a freighting ship of about 800 tons, called the Mary Bradford. She will sail for Mobile in a few days.

At Mystic, Conn., 2d inst., a three-decked freighting ship of about 1,500 tons, called the 'Bel Wood, of New-York.

At East Boston, 4th inst., ship Indiaman, 2,000 tons.

At Bowdoinham, Me., 26th ult., a ship of 1,226 tons, called the Windsor Forest.

At Belfast, 27th ult., a brig of 320 tons, called the Progressive Age.

At Cooper's Point, near Philadelphia, 4th inst., a barque of 400 tons, called the Isaac R. Davis.

At Freeport, Me., 4th inst., a half clipper ship of 1,200 tons, called the F. S. Perley.

At Bath, 5th inst., a ship of about 1,500 tons, called the Rocklight.

At Camden, 4th inst., a ship of 800 tons, called the Joseph Jones.

At Bristol, 7th inst., a schooner of about 180 tons, called the Nightingale.

At Frankfort, 4th inst., a ship of 665 tons burthen, called the Speedwell.

At Rockland, 6th inst., a freighting ship of 1,286 tons, called the Cavalier.

At Damariscotta, Me., 4th inst., a ship of 1,000 tons. 7th inst., a ship of 1,100 tons burthen. Also, same day, the ship E. Morris, 1,200 tons.

At Castine, 7th inst., ship Benjamin Thaxter, of 965 tons, built for the cotton trade.

At Rockland, 4th inst., a ship of 1,308 tons, called the Charles A. Farwell. She is intended for the general freighting business.

At Rockland, 6th inst., a brig of 262 tons, called the Sarah E. Dix.

At Bath, 8th inst., ship Armede Snow, of 550 tons. 11th, a freighting ship of about 1,800 tons, called the Great Duke.

At Bluehill, a ship of about 500 tons, called the Ocean Ranger.

At Belfast, 6th ult., a fine brig, called the Abby Ellen.

At Pittston, 13th ult., a brig called Bell Flower, of about 300 tons burthen.

At New-York, the clipper ship Adelaide, from the yard of Abraham C. Bell, foot of Stanton-street, E. R. She is intended for Thomas Wardle's line of San Francisco packets, and will be commanded by Captain Joseph Hamilton, late of the Eclipse.

At Rockland, ship J. Wakefield, of 1,628 tons; also, ship Yankee Ranger, 707 tons.

At Bath, a superior ship of 1,200 tons, called the Walter Scott.

At Cape Elizabeth, a brig of about 300 tons, called the Scotland.

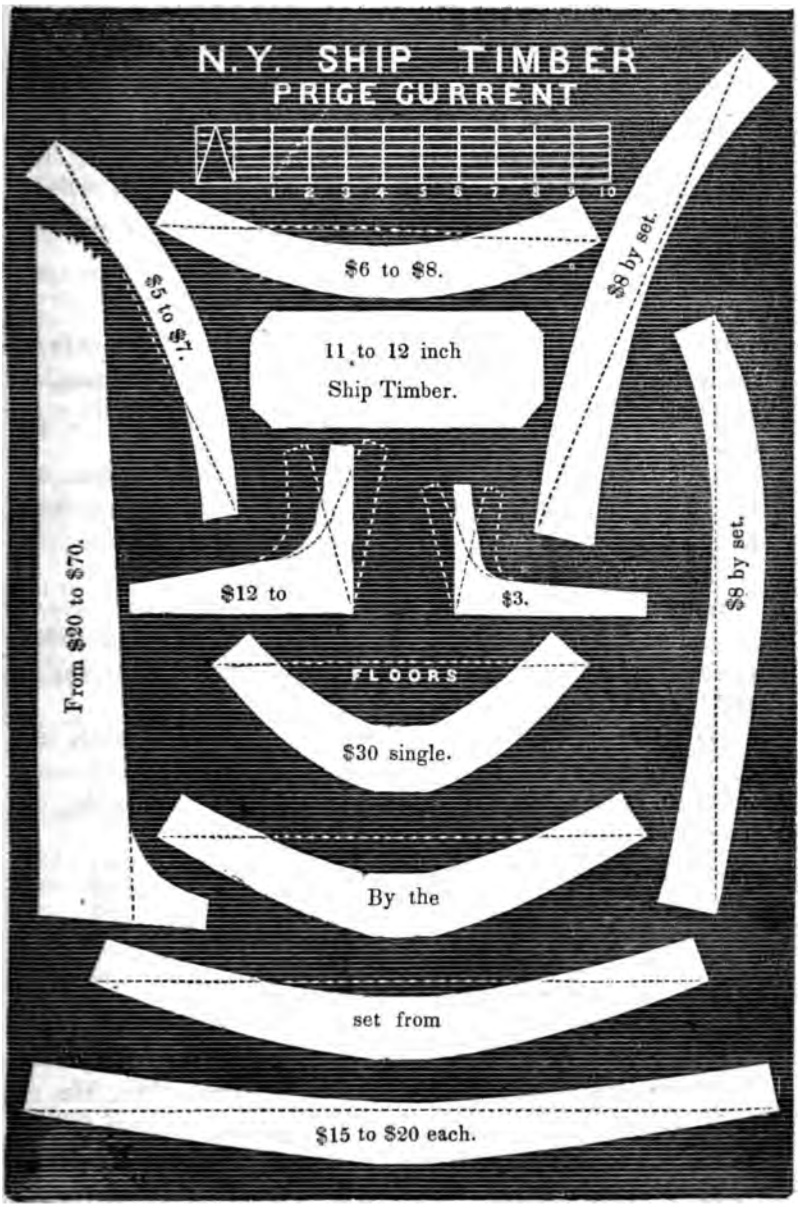
At Duxbury, a clipper barque of about 300 tons, called the Emblem, intended for the Baltimore and Boston Union Dispatch Line of packets.

At Thomaston, a fine ship of about 1,300 tons, called the Baden; a beautiful ship of about 1,650 tons, called the S. Curling, the largest ever built on the river; a ship of about 1,400 tons, called the Richard.

In Warren, Me., a ship of 1,000 tons, called the Stephen Crowell; a fine barque of about 450 tons, called the Lizzy Boggs.

At East Boston, on Friday, a superior ship of about 1000 tons, called the Zephyr. She will be employed in Southern freighting.

Steamer Ocean Bird.—We are informed by Captain Graham that this vessel is to be the pioneer in a line of steamers between San Francisco and China. It is expected she will be ready for service by the 1st of February, 1855. An additional deck has been added, which will prove a serious drawback on the high speed and fine sea qualities for which she was originally designed by her projector.



In New-York market there is no important change of prices to report since our last. Business continues dull, but the stock on hand, except small oak knees, is not large, and prices have declined no further.

BOSTON SHIP STOCK MARKET.

Reported for the Nautical Magazine by JOEL KNIGHT, Esq.

November 18, 1854.

IN consequence of the great depression of the ship-building interest at this time, *Ship Stock* has further declined during the past month, with the exception of oak plank, of which article this market is nearly bare, and would be, if wanted to any extent.

Say $55 for No. 1 white oak ship plank.
" $45 for No. 2 " " " "

HARD PINE continues nominally the same; no sales, with a small stock in first hands. OAK TIMBER, both rough and moulded, price nominally the same; no sales; stock fair for the season.

HACKMATACK TIMBER, small sizes, dull, and ranging from $6 to $10 per ton. Large timber wanted, at good prices—say from $12 to $15 per ton. The same remarks will apply to white pine timber.

WHITE PINE DECK PLANK have further declined, and cannot be sold at this time for over $30 per M. board measure. This price includes all the qualities used for the several ships' decks, and is dull of sale.

HACKMATACK SHIPS' KNEES have also declined in price, and cannot be sold at the present time for more than 45 to 48 cents per inch, at an average of 8 inches, and by the piece at the following:—

Piece 4 inch Hackmatack ship knees........	$0 95	to $1 00
" 5 " " "	1 20	to 1 25
" 6 " " "	1 95	to 2 00
" 7 " " "	2 75	to 2 80
" 8 " " "	4 75	to 4 80
" 9 " " "	7 00	to 7 20
" 10 " and upwards, from..............	10 00	to 12 00
Large Hooks and Sharp Rises................	15 00	to 20 00

OAK KNEES, with change, not many in market. Keel pieces and other ship timber, the same as last reported. Dull sale.

P. S.—The greatest portion of the depressed state of feeling in relation to ship property has not grown out of actual sales of ship, or other tonnage, this season, at greatly reduced prices. Such is not the fact. Few or no sales have been made, unless

some minor interest, under very unfavorable circumstances. On the other hand, ships, and in fact all the new tonnage now on the stocks and fit for market, have cost high prices, and are generally first class vessels. But, for some unaccountable reason, every man we meet, whether builder or owner, *talks* ships down: last year they were *talked* up. Public sentiment should be corrected in this particular, regarding this species of property, forthwith, for we think an unwise conservatism is prevailing in the public mind.

MARINE SALES.

NINE of the propellers of the Parker Vein Steam Navigation Company were sold at auction in the Merchants' Exchange yesterday, by order of the Supreme Court. They were sold with their tackle, apparel, &c., without reserve. Mr. Adrian H. Muller was the auctioneer. The following are the names of the vessels, and the prices they brought:—

Vessels.	Tons.	Price.
Piedmont	448 17-95	$9,000
Mount Savage	452 10-95	10,000
Parker Vein	460 50-95	12,500
Thomas Swann	462 90-95	13,500
Locust Point	462 90-95	14,000
George's Creek	448 6-95	14,000
Jackson	454 69-95	17,500
Westernport.	453 32-95	13,000
Caledonia	459 19-95	13,000

They were all purchased by Mr. A. C. Hall. Each was estimated to be worth $30,000. They were built in 1853, at Philadelphia, and cost $40,000.

FREIGHTS.

NEW-YORK, *November* 18, 1854.

BY SAILING VESSELS.		STERLING.				
TO LIVERPOOL.		*s.*	*d.*		*s.*	*d.*
Tobacco	hhds	—	—	to	—	—
Cotton, square bales	per lb	—	—	to	—	¼
Flour	per bbl	1	—	to	—	—
Rosin		1	—	to	—	—
Heavy Goods	per ton	12	6	to	15	—
Grain	per bush	—	4½	to	—	5
Beef	per tce	2	6	to	—	—
TO LONDON.						
Tobacco	per hhd	15	—	to	20	—
Flour	per bbl	—	—	to	1	6
Rosin and Turpentine	per 280 lbs	1	9	to	2	—
Furs and Skins	per ton	25	—	to	30	—
Heavy Goods, Oil, &c		17	6	to	22	6
Beef	per tce	3	—	to	4	—
Oil Cake	per ton	16	—	to	17	6
Grain	per bush	—	4½	to	—	5

TO HAVRE.

Cotton, square bales	per lb	—	— to	—	¼c
Ashes	per ton	$6	— to	$7	—
Rice		$8	— to	—	—
Quercitron Bark		—	— to	—	—
Measurement Goods		8	— to	10	—
Whalebone, &c	per lb	—	¼cto	—	—
Flour	per bbl	—	50cto	—	—
Grain	per bush	—	10cto	—	—

TO SAN FRANCISCO.—BY CLIPPERS.

Measurement Goods	per foot	—	30cto	—	40c
Heavy Goods	per ton	$15	— to$20	—	
Coal		$15	— to$17	—	

Statistics.

SHIP-BUILDING CLASSIFIED.

Table showing the number and class of Shipping built at the principal ports and Revenue Districts in the United States, for the year ending June 30, 1853, exhibiting at one view the locality of ship-building in the order of the greatest number of tons built in one year:—

Names of Ports and Districts.	Class of Vessels. Ships and barques.	Brigs.	Schooners.	Sloops and canal boats.	Steamers.	No. built.	Tonnage in tons and 95ths.
New-York	18	5	66	97	58	224	68,454.45
Boston	51	1	10	1	1	64	59,920.37
Bath, Maine	47	3	11	1	3	65	38,096.77
Philadelphia	1	4	28	102	22	157	24,426.91
Waldoborough, Maine	22	12	24	1	—	59	23,313.68
Baltimore	15	9	43	—	1	68	14,439.03
Passamaquoddy, Me	21	9	7	1	1	39	12,333.66
Cincinnati, Ohio	—	—	—	8	32	40	11,691.30
Belfast, Me	11	9	11	—	—	31	10.187.89
Portland, do	12	5	7	1	—	25	8,809.48
Portsmouth, N. H	9	—	1	—	—	10	8,666.11
Buffalo Creek, N. Y	—	1	9	—	12	22	8,619.78
Louisville, Ky	—	—	—	1	29	30	8,592.09
Newburyport, Mass	8	—	8	—	—	16	7,785.82
Pittsburg, Penn	—	—	—	—	34	34	7,112.11
Cuyahoga, or Cleveland, Ohio	4	—	16	14	3	37	7,015.50
Penobscot, Maine	4	7	26	2	1	40	6,491.03
Kennebunk, Maine	4	2	4	—	—	10	5,125.57
Wilmington, Del	—	1	11	19	2	33	4,435.64
Bangor, Maine	4	6	9	4	1	24	4.329.91
Gloucester, Mass	—	—	51	—	—	51	4,202.80
Oswego, N. Y	2	—	7	2	3	14	4,086.12
New-Bedford, Mass	9	—	3	1	—	13	3,796.16
Machias, Me	3	4	13	—	—	20	3,394.48
St. Louis, Mo	—	—	1	10	11	22	3,583.60
New-Albany, Ind	—	—	—	—	9	9	3,455.81
Detroit, Mich	—	1	16	—	8	25	3,416.44
New-Haven, Conn	2	—	10	2	1	15	3,144.01

THE SHIP-BUILDING OF BALTIMORE, 1854.

To Philip F. Thomas, Esq., the polite and gentlemanly Collector of the Port of Baltimore, we are indebted for the following valuable information :—

List of Vessels built and registered at the port of Baltimore, from 1st January, 1854, to 1st November, 1854, and also their length, breadth, depth and tonnage, and the names of the builders :

Den.	Names.	Length. ft.	Length. in.	Breadth. ft.	Breadth. in.	Depth. ft.	Depth. in.	Tons.	Names of Builders.
Ship	G. W. Garmany	149	0	31	6	15	9	680	Cooper & Butler.
"	Flora Temple	233	9	41	9	20	10½	1915	Abrahams & Ashcroft.
"	Sir John Franklin	170	8	35	8	17	10	999	John J. Abrahams.
Bark	A. A. Drebert	116	0	26	2	12	2	336	Joseph Harris.
"	Fanny Ealer	126	2	28	7	14	3½	468	Martin & Larkey.
"	Emily	114	6	26	10	10	9	299	J. A. Robb.
Sch'r	Ney	102	4	25	2	7	6	173	W. H. Skinner.
"	Echo	105	0	25	6	9	6	230	W. Skinner & Sons.
Ship	Pride of the Sea	206	0	41	9	20	10½	1660	Foster & Borze.
Sch'r	A. M. Bandell	85	0	24	0	8	0	142	J. N. & P. H. Muller.
"	Far West	66	0	20	6	5	0	58	W. Skinner & Sons.
"	Clark Cottrell	93	0	23	10	9	1	180	Sanks & Riggin.
"	Storm King	102	8	26	0	9	3	220	George B. Colton.
Ship	Canvas Back	153	7	32	2	16	1	731	Abrahams & Ashcroft.
Sch'r	Stars	82	6	24	2	5	10	100	W. Skinner & Sons.
Brig	Spirit of '76	104	9	25	6	10	3	246	Hunt & Wagner.
Sch'r	Samuel	94	8	25	0	9	9	204	Henry Kelley.
Brig	Correo	112	8	26	0	9	11	263	Hunt & Wagner.
Ship	America	176	7	38	0	19	6	1167	Cooper & Butler.
Sch'r	Frank	94	4	24	10	9	2	184	John H. Davis.
Bark	Lean Racer	140	4	27	0	13	8½	483	J. S. & M. J. Fardy.
Ship	Rattler	147	2	34	7	17	3½	794	Foster & Borze.
Brig	R. C. Wright	95	0	25	4	9	6	202	Hunt & Wagner.

SHIP-BUILDING, BATH DISTRICT, MAINE, 1854.

Denom.	Tonnage.	Names of Builders.	Where built.
Ship	1,353	Johnson Rideout	Bath.
"	1,400	"	"
Brig	267	"	"
"	276	"	"
Ship	1,388	Trufant, Drummond & Co.	"
"	1,500	" "	"
"	863	" "	"
"	800	" "	"
Brig	309	" "	"
"	283	" "	"
Ship	908	Hall, Snow & Co.	"
Bark	544	"	"
Brig	274	"	"
Ship	1,150	Jenks & Harding	"
Bark	350	"	"
"	424	"	"
Ship	883	Rogers & Son	"

Denom.	Tonnage.	Names of Builders.	Where built.
Ship	980	Rogers & Son	Bath.
"	1,050	"	"
"	769	Hougthon & Sons	"
"	1,300	"	"
"	1,083	Larrabee & Robinson	"
"	1,200	"	"
Brig	286	"	"
Ship	1,350	G. F. & J. Patten	"
"	1,000	Clark & Sewall	"
"	1,250	W. V. & O. Moses	"
"	1,119	" "	"
"	1 316	Harrison Springer	"
"	750	"	"
"	1,200	Lowell & Small	"
"	1,500	Berry & Richardson	"
"	1,327	H. & R. Hitchcock	"
"	1,400	"	"
"	1,096	Arnold & Co.	"
"	1,300	"	"
Brig	275	"	"
Ship	1,300	R. Morse & Sons	"
"	595	Lemont, Forsaith & Hall	"
"	600	" "	"
"	500	Randal & Bibber	"
Brig	276	Cox & Brother	"
Ship	1,400	——— Dinsmore	"
"	550	Lemont & Robinson	"
"	621	W. M. Reed & others	"
Schooner	50	H. Groves	"
Ship	1,005	Joseph Berry & Son	Bowdoinham.
"	1,256	" "	"
Brig	237	" "	"
Ship	1,020	St. Vincent Given	"
"	883	Berry, Carr & Fuller	"
"	894	John Harwood	"
"	550	Joseph C. Given	Brunswick.
"	567	J. C. Humphries	"
"	1,398	T. J. Southard	Richmond.
"	796	"	"
"	1,000	"	"
Schooner	168	"	"
Ship	767	Foster & McFarlane	"
"	960	"	"
"	670	"	"
"	825	Jack & Woodward	"
"	650	"	"
"	850	G. H. Ferrin	"
"	850	Patten & Sturtevant	"
"	820	H. P. Toothaker	"
"	769	"	"
"	1,100	A. & D. Allen	"
"	643	Thomas Spear, Jun.	"
Brig	299	"	"
"	250	Barker & Parks	"
Bark	528	Joseph Berry	Georgetown.
Ship	1,500	"	"
Schooner	22	Noah Webber	"
Ship	1,200	F. & W. Stevens	Pitston.
"	723	Wm. Cooper & others	"

Ship	912	Smith & Hunter	Pitston.
Brig	225	"	"
"	334	Daniel Blinn	"
Ship	700	Fuller & Andrews	Hallowell.
"	1,036	Reed & Page	"
"	1,100	"	"
"	548	James Atkins & others	"
"	1,090	T. Ripley	"
"	900	"	"
"	700	A. Merrill	"
Bark	350	Jonathan Kempton	"
Ship	700	Harvey, Prebble & Co.	Woolwich.
Brig	304	Rodney C. Gould	"
"	248	Ellwell P. Snett	Arrowsic.
Ship	700	C. A. Lambard	Augusta.
"	600	Blanding	"
"	600	Chas. Winat & Co.	Phipsburg.
Brig	315	"	"
Ship	550	Pierson, Morrison & Co.	"
"	750	W. L. Stone	Farmingdale.
"	900	W. S. Grant	"
Brig	420	E. G. Pierce	"

RECAPITULATION.

98 vessels.............................. Total tonnage, 77,615.

HALL, SNOW & CO.

CANADIAN SHIP-BUILDING.

Statement showing the Number and Tonnage of Steamers and Sailing Vessels built and registered, and also of those not registered, together with the number of men employed at the undermentioned ports in Canada, during the year 1852 :—

Ports.	Built.				Registered.				Not Registered.				
	Steamers.	Tonnage.	S'g Vessels.	Tonnage.	Steamers.	Tonnage.	S'g Vessels.	Tonnage.	Steamers.	Tonnage.	S'g Vessels.	Tonnage.	Total men.
Belleville	..	..	..	..	..	..	1	109	1	200	..	..	21
Brockville	1	81	..	..	3	306	2	196	2	70	4	274	88
Coburg	..	..	..	..	..	..	..	..	..	..	1	73	5
Coteau du Lac	..	..	..	..	..	..	..	..	..	..	7	471	24
Dalhousie	..	..	2	250	..	..	2	250	..	..	..	..	15
Dover	..	..	..	..	1	38	7	598	.	..	3	794	67
Goderich	..	..	3	79	..	..	2	67	..	..	2	24	35
Hamilton	1	89	..	..	3	407	10	1348	1	235	3	311	156
Hope	..	..	1	224	..	..	..	..	..	..	3	219	60
Kingston	1	342	..	..	..	..	..	..	4	760	1	300	50
Montreal	1	127	1	85	2	232	2	126	21	2136	13	1257	176
Niagara	1	500	..	..	..	..	..	..	1	500	..	..	35
Oakville	..	..	2	260	..	..	..	..	..	..	13	1591	82
Pictou	..	..	1	121	..	..	2	180	..	..	1	25	12
Quebec	4	572	48	28003	4	572	75	32616	..	..	..	..	1023
Rowan	..	..	1	100	..	..	4	224	..	..	1	100	25
Savina	..	.	..	..	..	..	2	331	..	..	2	80	12
Toronto	..	..	..	..	1	29	..	..	..	..	..	..	83
New Carlise	..	..	2	99	..	..	24	1247	..	..	..	..	93
Stanley	..	..	1	185	..	..	1	185	..	..	2	131	18
Total	9	1711	62	29406	14	1684	134	37477	30	3901	56	5650	2080

CANADIAN COMMERCE.

Ships Inwards.—Statement of a number of ships entered at the undermentioned ports, showing their tonnage, number of men employed, and the countries whence they came, for the year 1852, *and the three preceding years:*

Ports.	Total.			Gt. Britain.		B'sh Col's.		U. States.		Other For'gn Countries.	
	No.	Tons.	Men.	No.	Tons.	No.	Tons.	No.	Tons.	No.	Tons.
Montreal	461	69177	6464	89	34515	83	7572	268	23098	21	3992
Quebec	1234	506123	16636	789	362703	179	18680	155	90423	111	34317
	1695	575300	23100	878	397218	262	26252	423	113521	132	38309
Less, entered at both ports	79	22432	920	46	19152	27	2166	..	..	6	1114
	1616	552868	22180	832	378066	235	24086	423	113521	126	37195
New Carlise	68	6268	366	10	2274	51	2954	2	174	5	866
Gaspe	45	5106	257	10	1504	25	1575	5	1351	5	676
Total, 1852	1729	564242	22803	852	381844	311	28615	430	115046	136	38737
" 1851	1732	600194	20506	1016	446552	323	29648	238	98725	125	33960
" 1850	1500	522116	18466	805	332656	268	27624	298	126981	129	34855
" 1849	1328	502113	18118	929	395658	232	26421	107	64986	60	15440

Ships Outwards.—Statement of the number of ships entered outwards at the undermentioned ports, showing their tonnage, number of men employed, and to what country cleared, for the year 1852, *and the three preceding years:—*

Ports.	Total.			Gt. Britain.		B'sh Col's.		U. States.		Other For'gn Countries.	
	No.	Tons.	Men.	No.	Tons.	No.	Tons.	No.	Tons.	No.	Tons.
Montreal	252	51570	2327	80	31452	128	15980	43	3933	1	205
Quebec	1270	533913	17419	1093	519648	161	11474	6	924	10	1867
	1522	585483	19746	1173	551100	289	27454	49	4857	11	2072
Less, cleared at both ports	48	18014	665	28	12356	20	5658	..	..	..	..
	1474	567469	19081	1145	538744	269	21796	49	4857	11	2072
New Carlise	57	5782	344	4	1550	41	2429	2	174	10	1629
Gaspe	36	4808	248	10	2267	10	473	..	..	16	2068
Total, 1852	1567	578059	16973	1159	542561	320	24698	51	5031	37	5769
" 1851	1807	645246	21847	1320	610569	365	34860	54	8582	15	2865
" 1850	1587	543963	19116	1135	503443	256	18650	189	19812	7	2058
" 1849	1392	521604	18643	1120	502886	231	13244	40	4930	1	544

A Return of the Number and Tonnage of Foreign Vessels entered inwards at the ports of Quebec and Montreal during the year 1852, *and showing the countries to which they belong:—*

Countries.	No.	Tonnage.
Bremen	1	134
Mecklenburg	2	469
Norway	58	21,541
Prussia	32	10,314
Hamburg	1	599
Portugal	6	1,019
Sweden	3	979
United States	73	36,354
Total	175	71,409

An Account of the Number and Tonnage of Vessels from sea, entered inwards at the ports of Quebec and Montreal, during the years 1846, 1847, 1848, 1849, 1850, 1851, *and* 1852, *with the average number of men employed:—*

	1846.		1847.		1848.		1849.	
	Ships.	Tonnage.	Ships.	Tonnage.	Ships.	Tonnage.	Ships.	Tonnage.
Quebec	1480	566225	1210	479124	1188	452436	1184	465088
Montreal	219	55566	234	63381	162	41611	144	37425
Total	1699	623791	1444	542505	1350	494247	1328	502513

	1850.		1851.		1852.		Yearly average number of men employed.
	Ships.	Tonnage.	Ships.	Tonnage.	Ships.	Tonnage.	
Quebec	1136	440792	1300	533427	1234*	506123	17273
Montreal	205	45113	169	39970	98	22615	1390
Total	1341	485905	1469	573397	1332	528738	18662

DISASTERS ON THE WESTERN WATERS.

In the report of the Secretary of the Treasury to the Senate of the United States, 21st Jan., 1852, we have account of 1,656 steamboats built in the West before the year 1849—tonnage, 277,146. Of these, 736 boats (tonnage 131,400) were lost, and 920 boats (tonnage 145,746) worn out or abandoned.

The value of the lost boats	$5,643,791
And of cargo	12,698,529
	$18,342,320

These losses were:

	Boats.	Value of boats.		Boats.	Value of boats.
By collisions	45	$383,524	By collapsing flues	67	$134,000
By burnings	104	968,369	Escapement of steam	19	19,000
By explosions	82	770,800	Sinking by snags	419	3,368,098

The average ages of these boats were 3¾ years each.

We have had 6,210 years' services out of boats prior to the year 1849. Of these, there was lost each year, out of one hundred boats:

	Per cent.		Per cent.
By collisions	.722	By collapsing flues	1.079
By burnings	1.658	By escapement of steam	.306
By explosions	1.320	By sinking	6.747

To compare these disasters with what follows, we have an account of the year 1849 of losses:

	Boats.	Value of boats.		Boats.	Value of boats.
By collisions	5	$40,000	By explosions	9	$72,000
By burnings	37†	768,000	By collapsing	6	60,000
By do.	9‡	219,000	By sinking	27	460,000

* Of this number 79 vessels proceeded to and were entered at the Port of Montreal, and are not included in the 98 vessels.

† In port.

‡ In other places.

The loss of life in many of these boats is not stated.
In the explosion of the Louisiana there were 160 lives lost.

EXPLOSIONS.

Four boats, reported loss	31 lives.	
Six boats, not reported—supposed	50	
The S. B. Louisiana	160	
		——241

COLLAPSING FLUES.

Four boats, reported loss	15	
Two boats, not reported—supposed	10	
		—— 25
Whole number		266

At the close of the year 1848, there were in the West five hundred and seventy-two boats running.

By the report of Israel D. Adams to the Secretary of the Treasury, in the year 1853, there were registered in the West, on the 30th June, 1851, 601 boats. We may suppose that there were in 1849, 585 boats running; if so, the loss would be in that year:

	Boats.			Boats.	
By collisions	5	.854	By explosions	9	1.538
By burning in port	37	6.325	By sinking	27	4.615
By " in other places	9	1.538	By collapsing	6	1.026

LOSS OF LIFE, 1849.

266 lives lost on 585 boats would be the loss of one life for every 2.2 boats.

We have, in the report of Mr. Adams, an account of the disasters of Western boats in one year, ending June 30th, 1851, as follows:

	By Fire.	Collisions.	Sinking.	Lives Lost.
St. Louis	1	4	5	97
New-Orleans	11	1	1	51
Nashville	—	—	1	—
Louisville	3	—	4	29
Cincinnati	11	7	15	451
Pittsburgh	—	1	1	—
	26	13	27	628

There is no list of boats given, and the report is noted as being uncertain; if correct, it would be (as there were six hundred and one boats registered),

	Per cent.
By collisions	2.163
By burnings	4.327
By sinkings	4.475
Loss as reported	10.965

The loss by *steam* is not here reported. It is presumed that explosions swell the list of the loss of life.

628 persons, on 601 boats, equal to one life in the year for every .944 boats.

We have another report in the proceedings of the Board of Supervisors, without the names of boats, and consequently not to be certainly relied upon, "That in 13 months, ending 11th January, 1851, there were fifteen explosions, killing 300 persons, and a loss of property of $200,000." This would be nearly equal to thirteen explosions and 277 lives lost in the year there were 601 boats running.

Loss by explosions in the year, 2.166 per cent.

Again, we have, "In nineteen months, ending 30th August, 1852, nineteen explosions, with the loss of 390 persons, and property to the amount of $518,000," equal to twelve explosions and 246 lives in a year, or less.

By explosions per annum, 1.938. Supposing 620 boats, one life in a year for every 2.52 boats.

LOSS OF LIFE BY STEAM PER ANNUM.

Prior to 1849, one person to every 3.07 boats. In 1849, on 585 boats, 266 persons. In one year prior to 11th Jan., 1851, on 601 boats, 277 persons. In one year prior to 30th June, 1851, on 601 boats, 628 persons. In one year prior to 30th Sept., 1854, on 534 boats, 74 persons.

NOTE.—These losses are calculated as to the *number* of boats; and not as to the *value* or amount invested in steamboat stock. We lose but few large boats. Such losses, when they occur, are generally by fire, when in port.

LIST OF PATENT CLAIMS

IN MARINE ARCHITECTURE AND ENGINEERING,

Issued from the United States Patent Office for the past Month.

Square, Level Scale and Bevel.—Josiah Shanklin, of Parkersburgh, Va.: I claim the combination of the blades with the grooves and thumb screws, constructed and arranged in such manner, that my instruments can be used for the purpose of a square, level scale and bevel, substantially as described.

Rotary Steam Engines.—Benjamin H. Wright, of Rome, N. Y.: I claim, first, wherever a central piston wheel is used, the double cylinder, the one sliding on the other, in the manner and for the purposes substantially as set forth.

Second, I claim the two parts separately, and in combination, viz., the method of inserting a single piece of packing in the inner surface of the piston, through an aperture or recess in the latter, with a corresponding but limited cut in the piston wheel, together with the mode of protecting this aperture by the lateral overlap of the base or flanges of the piston.

Third, I claim the double oscillating valves having opposite wings, nevertheless preserving the advantage of a single wing through the peculiar outline, or use of a lesser cylindric surface between the wings on the side of the piston channel, reducing the cut in the cylinder for the passage of the piston to the least practical dimensions.

Fourth, I claim the introduction, in connection with a like cylindric surface, between the two wings on the opposite side of the valve, or a partition and separate chamber, and separate chamber adjacent to the outer wing, for the purposes explained.

Fifth, I claim the arrangment in connection with the oscillating valve of the induction and eduction passages, such that the first opens just at the termination of the revolution of the valve athwart the piston channel, and the second by an aperture in the valve cap, uncovered by the opposite wing when the valve is in the position before stated, the purpose of the arrangement being to promote regularity of movement and the working of steam expansively.

I claim also, the method of compensating for the less ready action of steam directly on the piston, by the use of the tappets, which are forced by the revolution of the valve down the abrupt inclination of an exterior cam wheel.

Sixth, I claim separately the passage through the valve, commencing near its periphery and terminating at the plane surface or valve seat as described, and as a combination for bringing the valve down across the piston channel. I claim the combined action, 1st, of the entering steam on its adjacent end of the valve; 2nd, of the steam passing through the valve, entering its induction wing from the piston channel, and discharging from the eduction wing against the valve seat; and 3rd, taking away to any desirable extent the resistance in the separate chamber behind the eduction wing substantially as described.

Seventh, I claim the method specified of balancing the pressure on the cylindrical cut-off valve, that is to say, by the removal of a suitable extent of surface diametrically opposite to the passages, or where there are two passages proximately situated, it is obvious a middle point may be used. These cuts or openings not being designed for steam passages, it is evident that their size or dimensions will be governed by totally distinct considerations.

Eighth, I claim governing the velocity of the engine by changing the position of the eccentric disk, which governs the motion of the cut-off valves by the lever from the governor; said disks when thus changing have a transverse motion on the shaft.

Ninth, I claim the annular steam chamber formed in one of the heads opposite to the piston channel, with branches to the cut-off cylinders respectively, and a like chamber in the other head as a common receiving chamber for the eduction ports.

Steam Engine.—Nathan Atherton, of Philadelphia: I do not claim a driving cylinder having screw like grooves in combination with a piston rod, for the purpose of converting reciprocating into continuous rotary motion.

But I claim the connection of such a cylinder with inclined projections, constructed and arranged substantially as described, for operating the valve gear by motion taken directly from the cylinder, whereby the proper lead may be given to the steam, whether the cylinder be turning to the right or left, and the engine is rendered more convenient, compact and durable than any heretofore known, in which the axis of the driving shaft is parallel to that of the piston.

Machinery for making Rope and Cordage.—John Harris, of Lansingburg, John B. Scott and Galen Richmond, of Troy, N. Y.: We claim, first, the arrangement of the gears, S and T, upon shaft H, in combination with the clutch O, and shaft I, so that by changing the position of the clutch we increase, retard or arrest the motion of the friction rim B, and reverse these motions in the manner described.

Second, the spider G, arranged and constructed substantially as described, in combination with the cam R, and the spiral spring upon the shaft, to give it a revolving motion, to rub the strands for the purposes described.

Manufacturing Mast Hoops.—C. W. Scott, of Lowell, Mass.: I do not claim revolving cutter heads for dressing lumber, as they have been known and used, neither do I claim stationary feed rolls as such, for they have also been known for planing board and other straight timber.

I claim the feed rolls L and K, the feed rolls I and J, and the cutters and cutter heads C and D, when they are so constructed, arranged, and operated as to round or finish and shape the mast hoops, while passing the said cutters and rolls, which shape, round or finish them, parallel to the grain, the hoops being at liberty to take their natural course, excepting where they are held by the feed and friction rolls, and where the cutter heads and cutters are operating to dress them, essentially and for the purposes set forth.

APPALLING SHIPWRECK OF THE NEW ERA.

We are pained to record one of the most fearful disasters that has ever taken place on our coast, in the wreck of the new ship *New Era*, freighted with 427 passengers from Bremen to New-York. On the morning of November 13th, after a passage of 46 days, the *New Era* neared our coast, where, in thick weather, the soundings alone furnish the only tangible evidence of a vessel's position. At the call of the morning watch, the Captain, after attending to the cast of the lead, retired to his cabin, leaving the second mate in charge of the deck. Added to the discomforts of a lengthy passage, the ship proved leaky, and the working of the pumps had been apportioned as a part of the duties of both passengers and crew. On the last night of the fatal voyage the wind blew a stiff breeze from S.E., which caused considerable sea, and the ship being enveloped in fog, which was scarcely illumined by the dawn of day, when the fearful echo of *breakers* ran through the crowded decks of the doomed vessel—and before six o'clock the ship struck on Deal Beach, swung broad-side to, and as she settled in the sand the sea made a clear breach over her; a few feeble and abortive efforts were made to get a line to the shore, and failing in this, by means of the boats, the Captain, officers and most of the crew escaped to the shore, and six hours after stranding the deserted ship had no commander, or a single man on board who understood what was being done on shore for the assistance of the unfortunate passengers, none of whom could speak the English language.

On the following morning after every living person had been rescued from the ship, only 143 (including the crew) of the 427 embarked at Bremen, were found to have escaped; making a loss of 284 lives.

A more frightful loss of life on ship-board has scarcely ever been recorded in the annals of emigrant voyages, reckless as these are sometimes made. Such a shameful neglect of the commonest precautions on approaching the coast, and the subsequent desertion of the helpless passengers, calls for a searching inquiry into the loose conduct and inhumanity of those in charge of the fated ship. It is a grave question of most significant import, whether there shall, or shall not be (as at present), a remedy for such culpable recklessness as this which consigns the trusting passenger to the tender mercies of *fate*, whenever he sets foot on ship-board. It is notorious that emigrants are landed here safer from their own vessels than from ours, in many cases. We do not hesitate to say, that some one should be made responsible for the safe termination of a voyage by *sea*, in the same manner that land conveyancers are held for the safety of life and limb.

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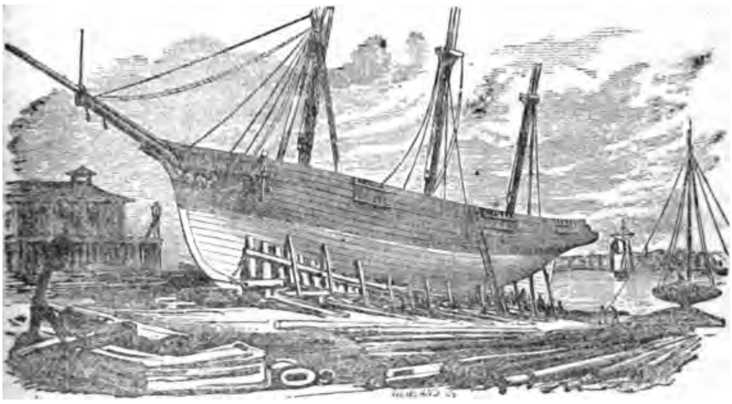
Monthly Nautical Magazine

AND

QUARTERLY REVIEW.

Vol. I.] JANUARY, 1855. [No. 4.

Mechanical Department.



LIFE-BOAT STEAMERS—IRON KELSONS AND BULKHEADS.

The history of nautical science and of maritime pursuits has established the fact that large ships, whether designed for sailing or steaming, are not strong in proportion to their size; for whilst the small vessel will, in some cases, bear to be sustained by the two ends, having a moderate weight on board, the large ship will not bear stranding without injury. This disparity in the strength arises from two causes. First, the capacity increases as the cubes, while the strength is only proportionate to the mass, and consequently as the squares. And secondly, the buoyancy and the weight are not commensurate in any vessel,

and more particularly in large ships and steamers, inasmuch as it often occurs that a section of length at the ends of the vessel is much heavier than a section of equal length in the more buoyant parts; and it is well known that the very extremities of a ship must sustain the ground tackle and other fixtures for the entire fabric, while the buoyancy is much less than the amount demanded by the weight of that section of the vessel itself. This will particularly apply to all longitudinally sharp vessels; and although it is no sign of defect in the model, yet it bears, in its effects upon the ship, unmistakable evidence of the disproportion in her size and strength, in the consequent effect upon the more buoyant sections, in sustaining the less buoyant, but stronger and more weighty ends of the vessel. But whilst this is the manifest result of building longitudinally sharp, and, consequently, long vessels, the consequences of a want of strength are equally manifest in the vessel having full ends, or with more buoyant bow and stern, when they have attained any considerable size, and (as a result) a proportion of length; although such a vessel, when in a state of rest, is quite competent to sustain, not only its own weight, but that which pertains to this particular locality, such as ground tackle, bowsprit, windlass, &c., yet when plunging into the waves, in storms at sea, she has too much buoyancy, and the bow cannot be kept down, the vessel is partially suspended by the ends, and any extension of pressure, beyond the most moderate application of power, has the tendency to break the bow, and if continued, would part the two extremities from the more central section; hence, it is plain that while the ends of the long and longitudinally sharp ships have not that support demanded by the weight, they must of necessity depend upon the more buoyant parts for the necessary support not furnished in their own sections, and consequently cannot be driven with a degree of power that would cause the overhanging end to protrude beyond the wave by which it is submerged, without hazarding the most fearful consequences, particularly if propelled by steam. It is also equally clear, that the long ship with full ends encounters difficulties equally insurmountable, when driven in storms beyond the most moderate application of power. Thus it is quite man-

ifest, that all ocean steamships, as at present constructed, are propelled at a much heavier cost than is needful for the present amount of strength furnished, or speed attained, consequent upon the expense of their too powerful engines, the power of which can only be used in fine weather, when in reality it is not so much needed as in storms; and from this fact, and this alone, arises the great difference in the length of voyages across the Atlantic of the same ship, beyond what is consequent upon a bad shape, or an ill-shapen model. It is to obviate these difficulties that we recommend the improvements which are set forth, and illustrated by the accompanying plate, showing not only the simplest application of those principles of construction, for increasing the strength of large vessels, but of any and every transposition of those principles, continued to the extremities, and taking a longitudinal position in the vessel; and also applying it to iron in the construction of kelsons, whether side or centre, in wooden vessels, which, while they may be so constructed as to occupy no more room than wooden kelsons, are both lighter and stronger.

We cannot regard the time as very far distant when iron kelsons will be universally adopted in wooden vessels of every class. The great necessity for increasing the longitudinal strength of vessels becomes more apparent with every increase of size, added to the increasing conviction of the superabundant strength of their sides, at the expense of the bilge and more central parts, which is exerting a salutary influence on public opinion, growing out of the investigations consequent upon the late calamitous disasters to passenger vessels. While it is remembered that steamboats, ocean steamers, and sometimes sailing ships, lose their sheer or longitudinal shape when new, before having made a single voyage, it will not be a matter of surprise that some measures should be adopted to remove this most prominent defect in the construction of vessels. It is notoriously true, that if a steamboat is allowed to lie without machinery for any considerable time after being launched, she loses her original shape, and unless a very considerable quantity of kentledge, or other ballast, occupies the place of the machinery, the boat shows her deformity before her trial trip; and

we have witnessed more than once this departure from original design when being launched, not only in steamboats, but in ocean steamers and freighting ships. If, in launching the vessel, the ways are not sufficiently low at the water, so that their ends form a fulcrum to the smallest extent, the vessel is hogged. If a freighting ship, or an ocean steamship, with good proportions and with but little dead-rise, and having sharp ends, be allowed to remain without cargo or ballast, she loses her shape unless she have centre kelsons far beyond the ordinary depth. On deep vessels, (if properly built,) the sides will not furnish an index to this deformity in the bottom; the frame being often cross-plated and riveted at the crossings, render the sides of the vessel rigid, not however beyond their requirements; the planking itself on the sides of the vessel furnishes a very great amount of strength; a benefit the bottom does not enjoy, because the plank can only resist the vertical strain in its single thickness, whereas on the sides the resistance of the plank is edgewise; but in addition to this, the bottom must sustain the weight of the sides, and as a consequence, every addition to the strength of the sides beyond a just equality, operates as though an equal amount of strength was taken from the bottom, inasmuch as the bottom works more, and the sides less, when the ship is at sea. The bilge being borne down by the weight of the sides, has no other relief than that furnished by yielding to the upward pressure on the bottom. Thus we may witness, upon careful examination, the ends of the vessel being borne down by weight without buoyancy to sustain, while the more central part is pressed up by excess of buoyancy, without weight or strength to keep down; for this contingency the iron kelson makes ample provision, without materially increasing the cost, and may be made subservient to all the purposes of *life-boat construction in the ship itself*, inasmuch as the transverse bulkhead is only rendered efficient in its connection with the longitudinal one, and cannot of itself but diminish the longitudinal strength. In the study of constructive art, in its application to vessels, the student cannot fail to discover that there is a constant tendency in vessels, when at sea, to yield to the form of the wave, particularly in the direction of the length; and what is most remarkable is, that

the part upon which this strain operates with the greatest force has the smallest amount of provision against its influences. The greatest immersed length of a vessel is found at the centre transversely, or from the stem at the bow to the post at the stern; hence it must be quite clear that the greatest amount of longitudinal strength should be found along this line of length; and inasmuch as the tendency to deflection operates along this line because of its length, so the greatest amount of strength should radiate from this line, inasmuch as the centre of forces operate therein. It must be quite apparent that wooden kelsons, made up of several lengths of timber, cannot secure strength in proportion to the bulk, in addition to the fact, that to obtain an equal amount of rigidity in the bottom by a timber kelson, with that of one of single thickness of plate iron, would form not only a very considerable part of the cargo, but be more costly and less durable. Iron kelsons may be constructed of single plates, riveted together and secured to the throats of the floors, either to angle iron, or to a wooden strake, and may extend to the beams and be secured to the stanchions by screw bolts; they may be calked or not, as the case may require; if the vessel is designed for the conveyance of passengers, it should not only be made water-tight, but there should be transverse bulkheads connecting with the centre one, dividing the hold into compartments, each of which might readily be rendered secure against encroachments of fire or flood upon other portions of the vessel.

The accompanying plate shows a ship and a steamer, with the bottom or outside of the vessel below the lower deck removed, in order to exhibit the kelson in its place. For the former they may be made as wooden kelsons now are, and used as water-tanks for fresh water, furnishing greater strength and capacity in the ratio of their height.

With regard to the adoption of transverse bulkheads alone, as a safeguard against the dangers of collision, fire or flood, there can be but one result arrived at by scientific men—viz.: that they would increase the danger, rather than remove it, in wooden vessels.

It is a fixed fact, a settled truth, that all wooden vessels yield

more or less to the application of propulsory power, both transversely and longitudinally, and approximate very nearly to a complete return to shape, when the power is removed. If this yielding to power in one direction be prevented, it must of necessity be increased in the other;—hence we say, that if the wooden vessel be made perfectly rigid transversely, the yield will be greater longitudinally. But suppose, with the present want of longitudinal strength in wooden vessels, transverse bulkheads were adopted, and a rupture should take place in the bow, and the water be prevented from coming farther aft than the bulkhead; is it not clear, that this weight of water on the end of the vessel would create a rupture midships, and cause her to founder sooner than she would from the leak itself? But if the longitudinal strength were sufficient to sustain this additional weight, the bulkhead would be a blessing; but without the longitudinal strength, it would be the same in effect as placing a life-preserver at the feet instead of the body of a man to save him from drowning. If the readers of the NAUTICAL MAGAZINE will but look at the long list of disasters that take place every month, they will, we think, join with us in regarding this question of assuring life in the construction of the vessel, of more consequence than any bill before the present Congress; more particularly when we remember that two-thirds of the loss of life and property are directly traceable to deformities generated by the Tonnage Laws, and a want of law in reference to *Life-Boat Construction* for passenger vessels.

THE SLOOP OF WAR ALBANY.—The probable loss of this vessel has given rise to the gratuitous expression of opinions through the press, relative to her model, without a knowledge of its peculiarities from the model itself. This is wrong, both in principle and practice; no man should undertake to write a criticism upon the model of a vessel, whether of naval or marine construction, unless he is master of his subject. We have no room for an exposition of her qualities from her tables, but shall give them in our next number.

NEW BALANCE FLOATING DRY DOCK.

200 LEWIS-STREET, NEW-YORK,
November 30, 1854.

GENTLEMEN:—

I inclose the following description of the New Balance Floating Dry Dock, now being constructed by me for the New-York Balance Dock Company, deeming it a proper subject for your Magazine, and shall be obliged if you can make room for its insertion in one of your forthcoming numbers.

Its principal dimensions are 325 ft. length, 99 ft. breadth, and 38½ ft. depth, and the method of construction as follows:—The bottom being formed of two thicknesses of white pine plank, laid transversely, fastened together, and calked top and bottom with wooden wedges, upon which are placed bb. large oak trusses and counter-trusses, 10 ft. high, placed equal distances apart from end to end, and extending from side to side of dock. The sides, formed of large pitch-pine timbers, secured at their lower ends to bottom of dock in the very strongest manner, extending to top or deck of dock, and planked on the outside, are perpendicular, braced, and further secured to bottom by large diagonal braces of pitch pine, extending from outside timbers or uprights to the trusses and bottom of dock. On each side of dock, about 6 ft. within the outer timbers or uprights, and extending from bottom to top of dock, a very heavy and strong longitudinal truss or hog frame is formed of large uprights, top and bottom cords, and large iron bars crossing each other diagonally, the whole being strongly secured to bottom of dock, cross-trusses, diagonal braces, and top deck frame. This hog frame, together with the diagonal braces, and top cord of cross-trusses, is planked on the inside, thus forming water-tight tanks the whole length of dock, on each side and bottom, the tanks being subdivided into several compartments, with water communications from each to the other, and to the pumps placed on each side of dock, about midway. The pumps, worked by two horizontal engines, (one on each side of dock,) of about 300 horses power, and supplied with steam from two

large locomotive boilers placed on top deck, are 12 in number each 30 in. diameter, and 3 ft. stroke, made of composition, and arranged so as to work at a velocity of one-third that of engines, which, under ordinary circumstances, at a speed of 55 revolutions per minute, will deliver about three millions, five hundred thousand gallons of water per hour. The mode of operating this immense structure, which surpasses in capacity, strength and convenience of operation, anything of the kind extant, is simply as follows:—It is sunk to the required depth by letting in water through a number of gates or valves placed in the sides and ends near the bottom of the dock; then the vessel or vessels (for it is sufficiently large to raise more than one of ordinary size at same time) are hauled in and stationed as desired; then the sinking valves are closed, the distributing valves opened, and the pumps put in motion, removing the water from the tanks in the sides and bottom, causing the dock to rise and the water to flow from the interior of dock at both ends, which are open, requiring *no gates*, there being sufficient buoyancy or lifting power in the tanks to raise the largest class steam-vessel, with all her coals, cargo, stores, and every necessary thing on board, or the largest steam line-of-battle ship ever built, with all her armament, coals, stores, crew, and every necessary thing on board, in about 90 to 100 minutes.'

This dock has all the advantage of a stone Dry Dock, besides many other advantages, and is considered in many respects superior to any other plan in use. It will be completed in about two months, and put in operation in the port of New-York, where it is very much needed.

Yours truly,

W. H. Webb.

To Messrs. Griffiths & Bates.

The Clipper Ship Great Republic has been rebuilt, and is now being masted and rigged at New-York. She is now on the berth for San Francisco. The *Great Republic* will be rigged as before, but will have no spar deck. She has again begun to attract crowds of visitors.

JARVIS' EXPERIMENTS UPON THE DURABILITY AND SEASON FOR CUTTING SHIP TIMBER.—No. I.

(*Prepared expressly for this Magazine.*)

LETTER FROM MR. JARVIS.

NAVY YARD, GOSPORT, VA.,
Oct. 2nd, 1854.

MESSRS. GRIFFITHS & BATES,
Eds. Nautical Magazine :—

GENTS.—I have received through the commandant of this yard the following letter :—

"BUREAU OF YARDS AND DOCKS,
"*28th Sept.*, 1854.

"CAPTAIN—You will be pleased to inform Mr. Jarvis, Timber Inspector of the Yard under your command, that he is authorized to furnish information in relation to Timber and experiments to Messrs. Griffiths & Bates, for the NAUTICAL MAGAZINE.

"Respectfully, your obedient servant,
(Signed) "JOS. SMITH.

"CAPT. SAMUEL L. BREESE,
"*or Commanding Officer Navy-Yard, Gosport.*"

I take this early opportunity of acquainting you with the fact, that I am prepared to furnish articles upon the subject of the above experiments, in continuation of my "Tables of Specific Gravity" already published in "Griffiths' Treatise on Marine and Naval Architecture," four years ago. You will oblige me, therefore, to recapitulate Mr. Griffiths' Notes, in that work, beginning on page 368 and ending on 374, and including the Tables of Specific Gravity, for the January number.

I will shortly prepare other tables to exhibit the specific gravity, and the weight in pounds, of a number of pieces of Live Oak, White Oak, and Yellow Pine, in the *Green Tree*, i. e. about ten days after being felled ; also the name of the month when felled, and the specific gravity and weight for 12 months thereafter, with the loss of weight by evaporation *under cover*, in one month, in one year, and in four years. Those tables will prove invaluable to the sciences, for the timber *in bark* is included with that hewn in oblong square blocks.

I am, gentlemen, very respectfully,
Your obedient servant,
JAMES JARVIS, *Inspector.*

We are glad to learn that the Navy Department have adopted measures to determine the proper time for cutting timber, and the best mode of curing it, or of securing it against dry rot ; in connection with this, their investigations also combine

a determination of its specific gravity. Those experiments are confined to the three principal kinds of ship timber, viz.: Live Oak, White Oak, and Yellow Pine, and will be of incalculable benefit to the Naval and mechanical interests of the United States. When we remember that there is no table of specific gravity that is at all reliable for any meridian in North America, and that our mechanics have been making their calculations from tables of specific gravity found in European works, we shall begin to approximate a conception of its value. A location in the timber districts of this wooded country for practical purposes, will satisfy the most incredulous that little is known about the productions of the American forest. We are doubly gratified to learn, that this important and responsible trust has been committed to Mr. James Jarvis, of Virginia, a mechanic whose unbending energy and zeal in the discharge of duty fully qualifies him for this important trust; and having filled the office of inspector and measurer of timber for the Government at its principal depot for many years, has acquired a knowledge of its defective properties to an extent unsurpassed, doubtless, by any man in this country. Mr. Jarvis has discretionary power given him by the department at Washington. He has kindly furnished us with the result of his experiments, which will perhaps be better illustrated in the following order.

On the 13th of September, 1819, he received, in 12 feet lengths, the butts of 10 trees of live oak, and an equal number of white oak and yellow pine; five of each kind were worked square at the place where cut, and the remaining five were brought round with the bark on. After their arrival, they were subdivided into three feet lengths; the square pieces are from 12 to 15 inches square; the round pieces in bark from 12 to 15 inches in diameter. The specific gravity of each piece is at once obtained, and then they are located as follows: Four pieces of the squared live oak, and four pieces of the round live oak in bark, are placed in tanks under cover, where are the solutions of *corrosive sublimate, alum, copperas and coal tar*, the same number of white oak and yellow pieces, amounting in all to 32 pieces of each species of ship timber; one half of which are square pieces, the other half round and in bark. These live oak, white oak, and

yellow pine pieces, were kept in the tank submerged one month, at the expiration of which time they were distributed as follows, under cover in open air, planted as posts, and laid as rail-road sills. There is a suitable number of the pieces which have not been prepared, also under cover in open air, planted as posts, and laid as rail-road sills. A proportion of the pieces are square and one round, and water-seasoned for six months, after being removed from the water. Two pieces are made of one, and one kept under cover, the other in open air. The pieces which have not been in the solution are the test pieces; and amongst these pieces, Mr. Jarvis has fitted some together, wood and wood, except having between them tarred paper coated with charcoal dust. A few years will prove, by ocular demonstration, which of the solutions, substances or water, will make timber most durable. The pieces which have had no preparation on them, and are kept under cover, are weighed each month, to observe the amount of juices or moisture lost by evaporation in one month, and in one year. The weighing of the first piece felled in September, 1849, had been weighed 12 times in August, 1850; therefore it will take until September, 1851, before the timber felled and received in August, 1850, can be weighed 12 times; the object in weighing or obtaining the specific gravity each month in the year is, that he may be able to determine the best time for cutting ship timber, or whether it is of any material consequence; and by testing the weight of the same kinds of timber, in connection with its durability, thus set this matter at rest. The timber used for these experiments is thus described: the live and white oak are of excellent quality, and felled purposely, with a few exceptions, for these experiments. The yellow pine is not as good as is used in the Navy; its specific gravity will not prove the fact. The very best of yellow pine is not of the greatest density. Pitch pine is not as good for decks or deck frames, as other fine-grained pine from the South. There is a species of yellow pine from about Wilmington, N. C., whose specific gravity equals the pine used in the experiments, and corresponds (difference of time when cut considered) with that found in table of specific gravities of dry timber, .610. The very best yellow pine timber is that in which the even firmness

of the grain is continued to the centre or pith of the tree. By careful observation, much information that is valuable may be obtained from the table of specific-gravity: notwithstanding the thickness of the bark of the yellow pine, and its lightness, (the specific gravity differing not materially from that of cork,) we find that the pine timber in bark weighs much more than the square timber. This, to the casual observer, would hardly seem possible; the man unacquainted with the nature of yellow pine sap wood, would be likely to doubt the correctness of the table. But such is the nature of the exterior coating immediately under the bark of yellow pine, that we cannot find a more analogous substance than that of sponge; its retentive properties are very similar, and the turpentine with which this sap wood is saturated is the cause of its increased specific gravity above that of the squared timber, when covered with bark. The thinner the sap wood, the less the specific gravity. There is an error in the prevailing opinion in relation to the durability of yellow pine timber. Our Government has become a heavy stockholder in this prevailing error, by acting on the supposition that yellow pine timber required a great amount of seasoning. The consequence has been, that large timber houses have been erected and filled with yellow pine timber, and kept for many years, and when in a state of decay have been used both for new vessels and those undergoing repairs. This is a great mistake; an equal number of months would have answered a better purpose than as many years, as it regards the shrinkage of yellow pine. When in pieces of any considerable size, it shrinks but little when the vessel is in active service, and when used as deck plank, should be made narrow. The convictions of our judgment lead us to this conclusion, that yellow pine requires no seasoning to make it durable. The ebb and flow of the turpentine is through the sap, as the specific gravity will show; hence we say that the capillary tubes of the heart would have no more of the resinous property, if cut at the proper season, than is required for strength; and to render it durable, which we think Mr. Jarvis's experiments will fully prove, the continued use of yellow pine timber in the private ship-yards of this city have already proved it incontestably. We could name ships built

in this city some 30 years ago, that have their first yellow pine beams in their decks; and we could point to others that have exhibited a durability in their deck frames, unknown in the Navy of the United States. Proper care should be taken to clear the timber of all sap; and, as it regards shrinkage in the Naval vessels, if the same measures were adopted as in the private yards, of making strakes of planks narrow, we think there would be no cause of complaint—the strakes of clamps, deck plank, and bulwarks of Naval vessels are too wide. There is another error, in that of preparing yellow pine timber in the woods, both for the private and for Naval purposes; it being absolutely necessary that the sap should be excluded. The timber should be eight instead of four square, thus in effect only taking off the sap, on account of the very best of the timber being next to the sap; this would enable the builder to work out water-ways, and all similar pieces, without cutting in as far as the pith on the exposed side of the piece. The present manner of cutting yellow pine timber is a reckless waste, the very best parts of the tree being left in the woods.

Inspectors measure square logs clear of sap, and the consequence is, that a very small three-cornered strip or vane of sap is left on the corners; whereas, if at the centre of the length of the log the sap were removed, and the log were measured as in other girth measurements, the most valuable parts would be brought as timber into the private and public yards; and although it would be somewhat awkward at first to receive timber in this manner, being accustomed to the square log, yet the price per cubic foot would actually be less, and the timber-getter would save in labor what he paid in extra hauling and freight; and not only so, but he would get paid for all the timber he bought. The government would save thousands of dollars, besides having better pine timber, were the Navy Department to have yellow pine forests at their command rather than timber sheds stored with pine timber, besides retaining the life of the timber, by not having the turpentine drawn from the tree before it is worked into timber, as we have already remarked. The most dense timber is not the best, or most durable, because of the amount of turpentine it contains; it is often rendered so

near the butt, in consequence of the tree having been tapped while standing, in order to draw off the turpentine. We would prefer the quality of pine we have alluded to, in its pristine state, without seasoning for durability, provided it were properly ventilated when in the ship. With regard to the density of white oak, it may with strong propriety be assumed that the quality is in the same ratio as the density; but we shall discover that the tables of specific gravity do not furnish an index for determining the best quality, inasmuch as they show the squared white oak timber, cut in December and May, to be the heaviest when cut, while at the same time that which was cut in January and July was of the best or better quality. In order to detect this supposed discrepancy, let us follow the subject farther; the timber in bark will show that our first conclusions were correct, inasmuch as the timber cut in July is of the greatest density, and that cut in January differs but a trifle from that cut in December; hence, we are inevitably brought to the threshold of this conclusion, that no table of specific gravity for white oak timber is reliable for determining the quality, unless its weight can be shown in the bark. The reason of this discrepancy between round and square timber in its density, is found in the fact, that the texture of the grain of some trees is better adapted for receiving the juices than others, throughout the entire transverse section, while others receive the supply chiefly through the sap. This latter kind is the best quality, and, as a consequence, is likely to prove the most durable, as well as being the strongest. There may, however, be exceptions even to this as a general rule. With regard to the specific gravity of the live oak, as shown by the tables, we clearly discover that the sap wood is lighter than the heart, inasmuch as the bark being thin, could scarcely reduce the weight as much as shown by the tables. The tables will not warrant this conclusion of white oak, inasmuch as we find that which was cut in March was heavier in bark than when squared; but although the sap of live oak and white oak is less durable than the heart, it is generally received with the heart, and as merchantable timber.

The lasting property of live oak consists chiefly in its being devoid of that acid juice which white oak contains. But this is not

all; the whole of the capillary tubes seem to be completely coated and filled with a greasy, glutinous substance, that is not found in the sap, which is doubtless the reason why the sap is not rendered equally durable. This substance may be brought out for analyzation by steaming—it takes steam quite as well, if not better, than yellow pine. The monthly tables of specific gravity of the green tree furnishing us, as they do, a basis of (doubtless) the most reliable series of experiments ever undertaken in this or any other country, will, we think, be examined with interest by mechanics, and particularly those whose business it is to use the three kinds of timber of which they take cognizance. In addition to the monthly tables, Mr. Jarvis has furnished us with the mean specific gravity as made up of twelve months, and carried the whole out into pounds and ounces avoirdupois.

GREEN TREE.

Specific Gravity of Timber fresh from the Forest, none of which was felled more than 10 days before the specific gravity was obtained.

ROUND LIVE OAK. Month Felled.	Specific Gravity.	lbs.	oz.	ROUND WHITE OAK. Month Felled.	Specific Gravity.	lbs.	oz.	ROUND YELLOW PINE. Month Felled.	Specific Gravity.	lbs.	oz.
September 15	1.144 =	71	10	September 15	.950 =	59	6	September 15	.828 =	51	12
October 15	1.173 =	73	5	October 15	.997 =	62	5	October 15	.764 =	47	12
November 15	1.182 =	73	14	November 15	.996 =	62	4	November 15	.777 =	48	9
December 15	1.186 =	74	2	December 15	1.018 =	63	10	December 15	.765 =	47	13
January 15	1.194 =	74	10	January 15	1.015 =	63	7	January 15	.823 =	51	7
February 15	1.173 =	73	5	February 15	1.014 =	63	6	February 15	.789 =	49	5
March 15	1.187 =	74	5	March 15	1.070 =	67	7	March 15	.782 =	48	14
April 15	1.193 =	74	9	April 15	1.013 =	63	5	April 15	.795 =	49	11
May 15	1.182 =	73	14	May 15	1.021 =	63	13	May 15	.744 =	46	8
June 15	1.154 =	72	2	June 15	1.005 =	62	13	June 15	.792 =	49	8
July 15	1.148 =	71	12	July 15	1.089 =	68	1	July 15	.751 =	46	15
August 12	1.176 =	73	8	August 15	1.054 =	65	14	August 15	.772 =	48	4

SQUARE LIVE OAK. Month Felled.	Specific Gravity.	lbs.	oz.	SQUARE WHITE OAK. Month Felled.	Specific Gravity.	lbs.	oz.	SQUARE YELLOW PINE. Month Felled.	Specific Gravity.	lbs.	oz.
September 15	1.242 =	77	10	September 15	1.037 =	64	13	September 15	.665 =	41	9
October 15	1.273 =	79	9	October 15	1.069 =	66	13	October 15	.662 =	41	6
November 15	1.274 =	79	10	November 15	1.058 =	66	2	November 15	.653 =	40	13
December 15	1.283 =	80	3	December 15	1.083 =	67	11	December 15	.639 =	39	15
January 15	1.283 =	80	3	January 15	1.068 =	66	12	January 15	.625 =	39	1
February 15	1.252 =	78	4	February 15	1.066 =	66	10	February 15	.673 =	42	1
March 15	1.261 =	78	13	March 15	1.044 =	65	4	March 15	.581 =	36	5
April 15	1.244 =	77	12	April 15	1.071 =	66	15	April 15	.683 =	42	11
May 15	1.258 =	78	10	May 15	1.102 =	68	14	May 15	.583 =	36	7
June 15	1.257 =	78	9	June 15	1.032 =	64	8	June 15	.595 =	37	3
July 15	1.239 =	76	15	July 15	1.123 =	70	3	July 15	.655 =	40	15
August 12	1.245 =	77	13	August 15	1.082 =	67	10	August 15	.639 =	39	15

MEAN SPECIFIC GRAVITY FOR ONE YEAR.

		lbs.	oz.
Square pieces of Live Oak (fractions off)	1.259 =	78	11
Round " " " " in bark	1.191 =	74	7
Square " " White "	1.069 =	66	13
Round " " " " in bark	1.020 =	63	12
Square " " Yellow Pine	.637 =	39	13
Round " " " " in bark	.781 =	48	13

HOW TO OBTAIN STRENGTH IN VESSELS.

The interrogatory note from an Eastern builder, to which we gave publicity on page 165, may have given rise to a similar inquiry in the minds of others. Perhaps a more important question (if we except that of admeasurement for tonnage) could not be selected within the orbit of Nautical Mechanism.

In order to obtain a just appreciation of this question, we must take up the ship as a unit, and analyze the various forces which operate to the disparagement of shape from her original design. It is, doubtless, a well-established truth, that all vessels, whether designed for the purposes of war, or to be employed in the more legitimate arts of peace, have a constant tendency to alter their shape, longitudinally; and in order that we may be fully satisfied of this fact, we have but to examine the vessels taken up for repairs upon the various balance or sectional docks, and we shall discover that the anterior extremity of the keel is always depressed; and if the vessel be narrow and deep, we find a similar depression at the greatest transverse section, or near the centre of length; and sometimes at the extreme after-end of the keel another may also be seen. It has been regarded by many as most mysterious, why vessels with the fullest bows should often be hogged most, or be formed longitudinally, with the greatest divergence from their original shape. It requires but a reasonable amount of time for reflection to enable the thinking man to arrive at a correct solution. It will be found, upon examination into the principles of construction, that the greater the divergence in the form of the anterior extremity of the vessel, with her course from a line, the less the longitudinal strength, whether the materials themselves be considered, or whether direct reference be had to the shape of the vessel. Upon this hypothesis we may readily discover the reason why war vessels of the largest size, with principal dimensions approximating good proportions, and full bows, are invariably hogged, when undergoing any considerable amount of service. The sides and bow have no sympathy with the stem and dead-wood in sustaining the redundancy of weight, consequent upon the ful-

ness; in addition to this, the dead-wood is of less height, and consequently of less strength, in full than in sharp vessels; the increased weight at this particular section, found in the bow-sprit, jib-boom, sprit-sail yard, anchors, cables, and sometimes an additional deck, will furnish sufficient reason for the depressed position of the anterior extremity of war vessels, beyond those of the merchant service, having less rotundity. It may be asked, why does the stern, or the after end of the keel, exhibit less evidence of this hogging tendency? We say, because of its having more support from the materials, both below and above water. First, the skeigs of vessels have so large a proportion of sameness, or vertical direction, to the planking, which, in connection with the strength of the dead-woods, prevent an abrupt deviation from the straight line; in addition to this, the sides or quarters continue to their terminus, nearly parallel to the longitudinal axis; this, also, is a means of strength. With regard to the depression midships, particularly in narrow vessels, we would say that this is in consequence of the bulk of cargo being heaped up in one locality; which, in a vessel of more beam and less depth, would have been spread over a larger surface, with more upward pressure of the water to sustain it, the divergence from shape to the bottom and keel must, of necessity, be less in the wide vessel. We may readily conceive the reason why the kelson sometimes leaves the heels of the stanchions in narrow vessels, and if kneed to them at head and heel, the decks must of necessity follow the bottom; hence, we are led to this conclusion: that the sides of vessels have more strength than the centre, along the line of the keel, in narrow, deep vessels; and though we should diminish the depth, or increase the breadth of the vessel, still the defect is apparent, though in another form, the difficulty was not that the sides were too strong, but that the centre was too weak; now, by extending the breadth, we increase the area of upward pressure, consequently the cargo is better sustained, even with an equal amount of strength in the materials. This is the reason why wide vessels exhibit less deformity midship, in their bottoms, than narrow vessels; and inasmuch as the vessel, when in active service, has cargo in the hold for a much longer period than that

in which it is unemployed, the redundancy of upward pressure makes no sensible deformity in the upward direction. Thus we may see, that in all sea-going vessels, whatever be their proportionate dimensions, there is a want of strength along the line of the keel; and this, we say, the ordinary wooden kelson does not, cannot furnish. The question may be asked, why? We say, because of its being of wood, it must of necessity be made in several lengths, and notwithstanding those pieces may be scarphed together, still the strength is not commensurate with the weight, as contrasted with iron kelsons; a fact which cannot, will not be denied. Now, to us, it is plain, that inasmuch as the shock of resistance, whether from the pressure of the water or from collision, must be communicated along the dead-wood and keel, because of their being the great terminus, all the strength of the vessel should *radiate* from this terminus; it should be to the vessel not only the keystone of the arch, but the abutments themselves, against which the stress of conflicting forces operate. The beams of all well-constructed vessels are sprung upward, beyond the curvature at which they were moulded, but what does it avail? if the keel and kelson, upon which the stanchions rest, are not rigid, the decks settle, and the sides must, as a consequence, depend upon their own intrinsic strength. If the kelson of a ship was built of timber up to the lower deck beams, we should find that its rigidity would greatly enhance the security of the vessel against the dangers of herself; and we would be understood to mean by this expression, that when the sea becomes dangerous, *the ship often becomes more dangerous*, in consequence of her own fragility in this particular. The timber kelson has in some cases been increased in height to five or six feet, and the results have been manifestly advantageous; still, we cannot count upon more than two-thirds of this height, or of any height for strength; the scarphs weaken the ponderous pile, and it is seldom that even this proportion is obtained. In addition to this, its weight and bulk is a great drawback upon the cargo; but if the kelson be made of plate iron, the strength will not only be commensurate with the bulk, but may be turned to good account by being prepared as water-tanks, for holding fresh water for the use of the vessel. It is a notorious truth,

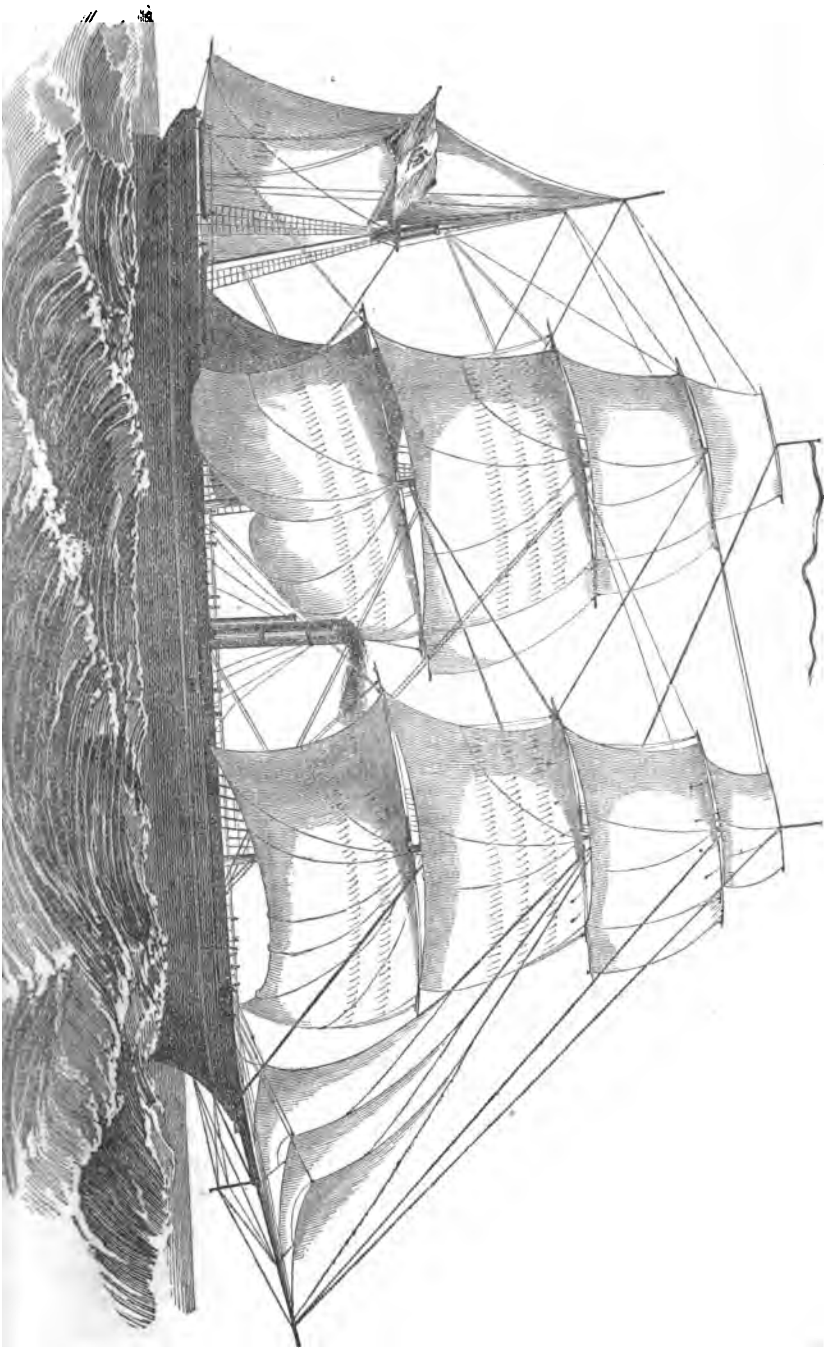
that while means have been devised to secure strength in the sides of vessels, by an admixture of wood and iron, we have neglected the axis of rotation, which required our first attention. Because we could see the sheer of a ship which makes manifest the slightest discrepancy in its curvature, we have given it our first attention, to the almost utter neglect of the more central, and consequently more important part. The keel-kelson and dead-woods are to the vessel what the foundation is to the ponderous structure of bricks and mortar on land—all-important to its safety. If we would care for the safety of life and property on ship-board, we must give our vessels security against the upward pressure of the fluid on the one hand, and against the gravitating influence of the cargo on the other. Why, we ask, is it that vessels, in launching, lose the pitch from their seams? Simply because of a want of rigidity in their length; the bottom being removed from sight, is partially forgotten, as it regards strength, while its vibrations, under change of circumstances, resemble the bottom of an ordinary tin basin, with this difference: the basin attracts attention by its noise more than by its movements; but the complaints made by a ship at sea are drowned by the vociferations of the tempest, and consequently pass unheeded. Our remarks relative to longitudinal strength apply equally well to single-decked coasters, and particularly to centre-board vessels. The iron kelson extending quite up to the deck would form a most admirable trunk for the board, and then we should not be troubled with leaky trunks in centre-board vessels. It may be said that an iron kelson, extending up to the lower deck, would be too bulky and inconvenient; that it would prevent egress from one side to the other. To the first objection we say, that it need not be a tank of the siding size of the keel, unless desired; a single course of plate iron, fastened to the side of the stanchions, extending to the deck, and secured both above and below to angle iron, would secure all the rigidity required—an amount quite capable of sustaining the entire vessel and cargo, without the wooden kelson. The room occupied would be inconsiderable, much less than the ordinary wooden kelson, and the convenience would not be materially impaired. A passage could be made through the iron at the hatchways,

around which it should be of greater thickness, in order to maintain an even amount of strength. The advantages of such construction against the dangers of fire, as well as those consequent upon collision, would, in themselves, afford a sufficient reason for their adoption, did not the weakness of the vessel actually require it. The passages at the hatchways, in the bulkhead, could readily be made so as to be water-tight, when closed. In steam vessels, an additional amount of strength might be secured by building the coal bunkers of plate iron, and securing them, both above and below, to angle iron fastened to the hull and stanchions, forming the same. We have thus briefly answered the question of an Eastern builder, we hope to his entire satisfaction. Should it, however, prove otherwise, we should be happy to acknowledge the receipt of another letter to that effect.

DRAUGHTS AND CALCULATIONS OF THE SANTA ANNA AND ITURBIDE SCREW STEAMERS.

Since publishing the description of engines and particulars of trial trip, the polite and gentlemanly builder of these fine ships, A. A. Westervelt, Esq., of New-York, has favored us with an examination of their model, from which we have taken their lines and made calculations. We also give a perspective view of the Santa Anna at sea, and for particulars of performance would refer to page 176. These vessels may be classed as auxiliary screw ships; and, as will be seen, work equally well as steamers or sailers; and for their size, are fully equal to any others under sail and steam united. Their symmetry of model does credit to Mr. Westervelt's skill and taste.

These are not the first or only vessels of war which have been ordered by foreign governments at the hands of American builders. For several years past it has been no uncommon thing for New-York mechanics to fit out armed vessels for foreign powers; and some of the finest on the seas, among the fleets of secondary nations, have been launched from the private yards in the United States. Instead of maintaining expensive naval establishments at home, to which it would be fruitless to endeavor to attract genius and skill, under the ordinary system of rigid discipline, monotonous routine, and the dictation of su-



periors, (as if any could be superior to the Naval Architect,) practised universally in the dock-yards of Naval powers, these governments have wisely turned to American markets, either to build or buy, assured that our mechanics can furnish not only the best, but the cheapest, in the line of nautical mechanism.

It only requires the freedom and development of commercial instincts, among maritime nations, to render the United States the world's ship-yard, and the central state of commerce, surrounded by belts of traffic, binding the shoulders of the old world to the wheels of the new.

SCANTLING OF HULL.

The keel is sided 12 inches, and moulded 15 inches. The timbering-room is 24 inches. The frame is entirely of live oak up to the rail—sided from 10 at the keel to 8 inches at the rail—and moulded 13 inches at the garboard, (10 inches at the bilge,) and 7 inches at the rail. The kelsons of oak are sided 12 and moulded 15 inches; the dead-woods are of yellow pine. The ceiling on the flat of the floor is $3\frac{1}{2}$ inch oak; from the floor-head it is 8 inch yellow pine, diminishing to 5 inches at the lower edge of clamps; the clamps consist of two strakes of $6\frac{1}{2}$ inch yellow pine, let on to the frame $1\frac{1}{2}$ inches, and bolted edgewise with $\frac{7}{8}$th inch iron, every three feet. The garboard strake is 6 inches thick, of oak, and the bottom plank is likewise oak, 4 inches thick, as far out as the outer turn of the bilge. The wales are 5 inch yellow pine, bolted edgewise every three ft.

CALCULATIONS OF HULL.

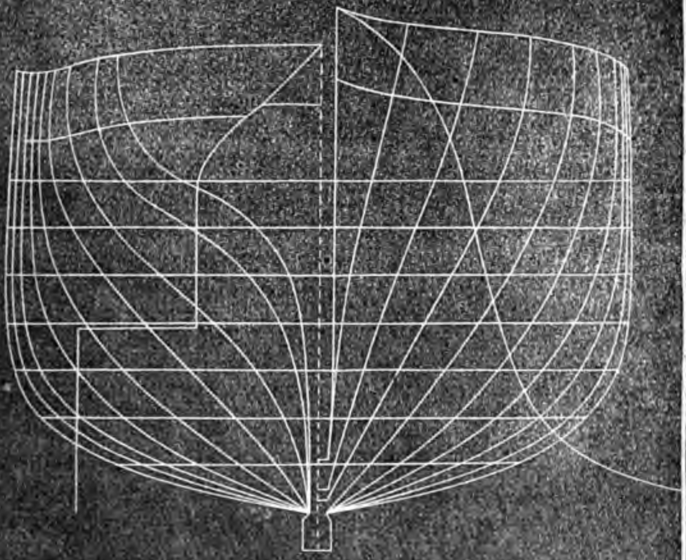
Height of load line of construction above base.........=	10	feet.
Displacement, moulded, below the same...............=	18,711	cub. ft.
Displacement, planked. " " ....=	19,810	"
Displacement, total in gross tons......................=	566	
Centre of displacement forward of middle of load line..=	0.24	feet.
Centre of displacement below load line of construction..=	4.41	"
Area of load line, or load water plane..................=	2,754.40	"
Centre of gravity of load water plane aft middle of length,=	0,73	"
Exponent of area of load water plane..................=	0.727	"
Area of dead flat frame in square feet..................=	215.64	"
Exponent of fulness of dead flat section..................=	0.82	"

This frame is located amidships, but it will be seen that the breadth is greatest about 10 feet farther forward.

Moment of stability is not great.......................=	365,131	
Meta-centre above the centre of displacement........=	6.50	feet.
Exponent of displacement...........................=	0.50	

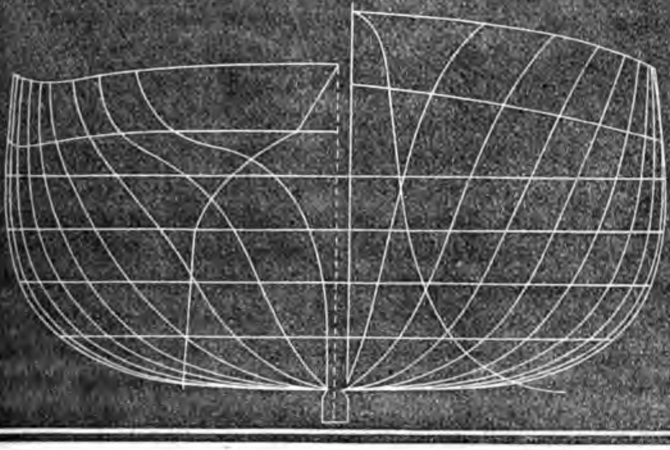
It will be seen these vessels are quite sharp, particularly in the aft body below water, where the buoyancy is very materially reduced. The bow, however, is very fine. A slight increase of convexity in the side line, by the addition of breadth, would detract nothing from its beautiful proportions, and add much to the stability, if this was desirable.

SANTA ANNA.



SCALE 1/8 = 1 FT

OSPRAY.



PROPELLER OSPRAY.

Having furnished the body plan of two splendid armed screw teamers, built in New-York for a foreign Navy, we turn, with equal pride, to the peaceful fleets of our coastwise commerce, and select a small, but beautiful vessel, known in the New-York and Providence Line as the Propeller Ospray, the body plan of which we have also shown on the same plate with the former. It will no doubt be seen that there is a marked contrast between these two plans; and though each observer will appreciate by his own standard, yet it rests with us to assure the critic that each vessel has gained a reputation for satisfactory performance. It will also be observed, that notwithstanding the difference in principal proportions, they embrace similar and correct principles of elementary design. For instance, both are quite sharp; the location of dead-flat frame is near the middle of length, and tolerably easy; the centre of buoyancy, or displacement, is high, and the practical stability thereby increased; the sheer is not large, and the bow is the sharpest and highest end above water. But when the details of shape are considered, the greatest contrast is found between them. The Ospray has a very round side-line, and an extremely fine midship body; the floor is carried well fore and aft—full below, but quite sharp at the surface; the water-lines are hollow on the bow, but nearly straight aft. On the other hand, the war steamer model has the straight side-line, a very fine hollow bow, and an extremely thin aft end—the floor rising instead of shortening, as in the former case. The Ospray has the fuller midship section, with an easier bilge—consequent upon greater relative beam—and is, moreover, the fullest vessel in the displacement. Both vessels trim by the stern, and consequently, under these circumstances, assume another shape in the water-lines, so called, and in the lines of resistance. By this we mean to say, that the *ratio* of buoyancy and resistance between the two ends is varied, according to the degree of trim, from the modeller's calculation. The effect of trimming by either end from the parallel of flotation designed by the builder, is to *alter* the model; and every degree,

or minute of a degree, which the propeller shaft is thereby made to incline to the plane of the sea, marks a corresponding loss of speed. More accuracy is required in the trim of a propeller than the sailing or side-wheel vessel; the reason is found in the necessity for direct action in the thrust of the screw.

The Ospray was modelled and built by Mr. SAMUEL SNEEDEN, of Green Point, New-York, to whose courtesy we are indebted for the use of the model, for the purpose of obtaining the lines and making calculations.

DIMENSIONS.

Length on load-line of construction........................	140	feet.
Height of same above base...............................	9	"
Breadth on the same, midships...........................	28	"

CALCULATIONS.

Area of load-line section, in square feet...........=	1,407.26	
Exponent of the same..........................=	0.72	
Area of dead-flat section in square feet..........=	108.36	
Exponent of the same..........................=	0.86	
Location abaft the middle of L. L., in feet........=	1.42	
Moulded displacement, in cubic feet..............=	19,303.66	
Planked ditto and total, " " ....=	20,438.	
Displacement in gross tons......................=	584.	
Exponent of displacement.......................=	0.544	
Centre of gravity of displacement below L. L.....=	3.85	feet.
Centre of gravity aft of middle of L. L...........=	0.50	"
Movement of stability................S $\frac{2}{3} y^3 dx$	135,764.48	
Height of meta centre above buoyancy...........	7.03	feet.

The draughts are drawn on one-eighth scale.

The rig is three-mast fore-and-aft schooner.. The boiler is situated upon the main deck, and is 24 feet long and 10 feet diameter. Cylinder is 34 inches diameter and 36 inches stroke. Screw is 9 feet diameter, with 4 blades and 17 feet pitch, and with 30 pounds of steam makes 71 revolutions per minute. When loaded, usually draws 8 feet of water aft, and 5 feet forward. The Ospray is built with an upper deck from midships to the stern, under which the cabins and propelling machinery are located. The hold and fore deck are clear for freight.

TONNAGE.—No. IV.

In the continuation of our remarks on tonnage, we unhesitatingly say that the present, or, indeed, any law based upon dimensions, whether the measurements be taken within or without the vessel, must serve to check improvements in their models. The bulk of the vessel, and that only, should be the basis of the law for tonnage admeasurement.

The result of the passage of such law would be, that modelling would be left entirely free; the ship-owner might select such dimensions as the ship-builder should propose, not being warped in judgment by his own immediate interest. The merchant, the mechanic, and the government, would be placed on equal terms: the size of the vessel would be most accurately determined by the cavity made by the floating vessel, if decks were added, whether at the time of building, or at any subsequent period; the increased number of cubic feet of water displaced would determine the additional advantage to be derived. The water into which the vessel was launched would serve as a hydrostatic balance to determine both the bulk and weight of the vessel. The process of computation being simple, all parties connected with commercial operations, and having an ordinary stock of knowledge in the rudiments of arithmetic, could determine the tonnage of a vessel at any given line of flotation. In order that this manner of computing the displacement or weight of a vessel may appear quite clear, we will assume, that from the model of a ship we find the displacement, or the number of cubic feet of water displaced at every parallel line of flotation, equally spaced three inches apart from the keel to gunwale; this should be done while the vessel is building, and registered immediately after the vessel is launched, and as soon as her appurtenances are on board, the line of flotation is ascertained; and the number of cubic feet of water displaced below this line is the weight of the vessel; this weight deducted from that shown at any subsequent line of flotation, will leave a remainder equal to the actual tonnage at its corresponding line of flotation—this tonnage is the actual weight of the cargo, or whatever else may

have been placed on board subsequent to the determination of the weight of the vessel itself.

A single example will serve to make the matter quite clear: suppose a ship to displace 1,000 tons, or 35,000 cubic feet of water at her launching line of flotation, and that she gains 50 tons of 1,750 cubic feet of displacement for every three inches above that launching line; we will again suppose that she is loaded 8 feet above the launching line, which would equal 32 of the three inch spaces—we then have $32 \times 50 = 1,600$ tons as the burthen of the vessel, her total displacement being 2,600 tons, and 1,000 tons deducted for the weight of the hull. If the vessel should be loaded deeper, the tonnage would, of course, be increased; and this rule of displacement will apply universally to vessels of every form and of every size. If it should be thought best to make allowance for the engines on steam vessels, the weight might readily be determined in the same manner, and the reduction registered. It may be well to remark, that 35 cubic feet of salt water are equal to one ton; this would cover such freight as is called dead weight; for lighter goods, 40 should be the divisor, inasmuch as 40 cubic feet of measurement goods are only equal to one ton of displacement. This tonnage admeasurement, it will be perceived, recognizes the weight of bulk of the cargo, and has no further connection with the vessel than to use her as a pair of scales, or a measure, to weigh or determine the bulk of the cargo; if she is but half full, the merchant pays dues on only half, or what she has on board; if she is over-loaded, he pays dues on the increased amount.

In order that vessels may be properly appraised, both by merchant and mechanic, with reference to capacity and value under the present law, it has been found necessary to seek an adjustable scale that does not burden the merchant, nor yet tax the mechanic; that neither defrauds the government, nor yet endangers the passenger. With regard to the present regulations of freight and its apportionment of weight and bulk, the Chamber of Commerce of New-York City determine, from time to time, such rules as relate to the regulation of bulk and weight in freighting operations. The following table, accompanying

an extract from their by-laws, will serve to show the distinction recognized, both in weight and bulk, when applied to different kinds of goods (to which we have added others):—

Resolved. That when vessels are freighted by the ton, and no special agreement is made between the owner of the vessel and the freighter of the goods respecting the proportion of tonnage which each particular article shall be computed at the following regulations shall be the standard of computation. That the articles, the bulk of which shall compose a ton, to equal a ton of heavy materials, shall be in weight as follows:—

			Ton.
Coffee in casks	lbs.	1,568 =	1
Coffee in bags		1,830 =	1
Cocoa in casks		1,120 =	1
Cocoa in bags		1,307 =	1
Pimento in casks		952 =	1
Pimento in bags		1,110 =	1

FREIGHT BY BULK AND WEIGHT.

Pig and Bar Iron, Potash, Sugar, Logwood, Fustic, Nicaragua Wood, and heavy Dye-Woods, Rice, Honey, Copper Ore, and all other heavy Goods	20	cwt.	= 1	ton.
Coffee, Cocoa and Dried Codfish, in bulk	16	"	= 1	"
Dried Codfish in cask of any size	12	"	= 1	"
Ship Bread in casks	6	"	= 1	"
Ship Bread in bags	7	"	= 1	"
Ship Bread in bulk	8	"	= 1	"
Dry Hides	10	"	= 1	"
Raw Silk, China	8	"	= 1	"
Bohea Tea	10	"	= 1	"
Green Tea	8	"	= 1	"
Grain, Peas, or Beans, in casks	22	bushels	= 1	"
Grain, in bulk	36	"	= 1	"
Salt, European	36	"	= 1	"
Salt, West India	29	"	= 1	"
Sea Coal	31	"	= 1	"
Oil, Wine, Brandy, or any kind of Liquor, reckoning the full contents of the cask Wine Measure	200	gallons	= 1	"
Mahogany, Square Timber, Oak Plank, Pine and other Boards, Beavers, Furs, Peltry, Beeswax, Cotton, Wool, and bale goods of all kinds	40	cubic ft.	= 1	"
Tobacco	1	hhd.	= 1	"
Flour, in barrels of 196 lbs.	8	bbls.	= 1	"
Beef, Pork, Tallow, Pickled Fish, Pitch, Tar and Turpentine	6	"	= 1	"

The following table shows the number of cubic feet equal to a ton by

bulk and weight of different substances, the mean of which differs but a fraction from 32 :—

	Cubic feet.			Cubic feet.	
Of Cast Iron...	4.97	= 1 ton.	Of Coal, Anthracite	42.3	= 1 ton.
" Wrought " ...	4.60	= 1 "	" " Bitumin's.	44.8	= 1 "
" Steel " ...	4.57	= 1 "	" " Cumberl'd	42.3	= 1 "
" Copper " ...	4.03	= 1 "	Stone Coal, 28 bush. 5 pecks..........		= 1 "
" Lead " ...	3.16	= 1 "	" "	43.56	= 1 "
" Brass " ...	4.16	= 1 "	Coke, Midlothian....	68.5	= 1 "
" Tin " ...	4.91	= 1 "	" Cumberland...	70.9	= 1 "
" Gold " ...	2.21	= 1 "	" Natu'l Virginia	48.3	= 1 "
" Silver " ...	4.07	= 1 "	Water, Salt.........	34.8	= 1 "
" Marble, com'n..	15.9	= 1 "	" Fresh........	35.9	= 1 "
" Mill Stone.....	17.2	= 1 "	Ice................	38.56	= 1 "
" Plaster Paris....	21.3	= 1 "	Live Oak..........	32.	= 1 "
" Granite........	16.1	= 1 "	White "	49.5	= 1 "
" Sand..........	23.7	= 1 "	Mahogany	33.8	= 1 "
" Clay	22.1	= 1 "	Yellow Pine........	66.2	= 1 "
" Bricks.........	22.4	= 1 "	White "	75.6	= 1 "
" Earth (loose)...	28.5	= 1 "			

THE CLIPPER SHIP BLUE JACKET, IN THE LIVERPOOL AND AUSTRALIAN TRADE.—This new and beautiful ship was built at East Boston, during the past year, by R. E. Jackson. She is 224 feet on deck, 41 1-3 feet extreme breadth of beam, 24 feet hold, and registers 1,790 tons. Her frame is white oak, the plank and ceiling hard pine. She is diagonally braced with iron, and is square-fastened throughout. The stern is ornamented with an arch of gilded carving, in the centre of which are representations of fruits and flowers. The bow is ornamented with a full-length carved figure of a blue-jacket sailor. In the left hand he holds the American flag, in the right a cutlass. Her cabins, of which she has two, are under a poop deck. The saloon is 40 feet long by 14 wide, painted white, and ornamented with papier maché gilt work; in the centre of each panel is a representation of flowers, fruit and game. This saloon contains 20 state-rooms, ventilated and finished in a superior manner; the furniture, carpets, and drapery in each, being different. Each room has a square window on its side, and deck lights above. The after, or ladies' cabin, is 30 feet long by 13 wide, and contains eight state-rooms and a bath-room. This cabin is a miniature palace. It is wainscoted with mahogany, the entablatures are of rosewood, and the pillars of satinwood. The panels are ornamented with flowers, surrounded by gilt scroll work. The capitals and pedestals are neatly covered, the whole relieved with papier maché cornices and gilt work. The cabin is well lighted and ventilated, having four windows aft, a large, square sky-light, and one in the centre, which ventilates the deck below.

☞ WILL Mr. ———, who signs himself "An Eastern Builder," in his query published in our last number, please inform us what has become of the Convention of Ship-Builders, held in April last, relative to tonnage and other matters?

GREATER SAFETY IN STEAM NAVIGATION.

A REVIEW OF THE STEAM VESSEL ACT OF 1852.

The rapid growth of steam travel in the United States has established steam navigation as one of the most popular demands of our age. A steam marine transit has now become a fixed want of our people. Notwithstanding the early imperfections of the steam engine and steam vessel, hanging dread insecurity over the adventurous traveller, followed by periods marked by the reckless use of this mighty agency, added to the rivalry of railroads, we find this mode of navigation steadily attaining increased favor in the public mind. The most shocking catastrophes of conflagration, wreck, or explosion, have failed to condemn it for insecurity, and so far from arriving at this undesirable result, the people have determined to investigate the causes of accident and disaster, to gain correct information concerning the safeguards for their prevention, and provide for the same by law.

The general desire for legislation upon this subject had its origin in the wide-felt necessity of all for a safe, swift, and commodious water carriage upon every maritime tributary to the wealth and well-being of the American people.

Hence, we find the first enactment by Congress in 1852, "For the better security of the lives of passengers on board of vessels propelled in whole or in part by steam," made in answer

to their demand, although opposed by remonstrances from proprietors and officers of such vessels, denouncing the proposed interference in matters hitherto thought by themselves to be exclusively of their own personal concern. Imperfect as this law must be regarded in many respects, a practical working of little more than two years has very generally satisfied all parties of the wisdom of its design and leading provisions, not only in behalf of human life, but in the saving of property, and in establishing *confidence in the safety* and superiority of steam transportation and travel.

Farther experience in steam navigation has not only impressed its indispensable utility upon the public mind, but demonstrated, by a number of sad and shocking catastrophes, that we are far from having yet attained a full measure of protection from the casualties of steam vessels. During the discussions of the present law, almost exclusive attention was given to the engines, boilers, and management of the vessel; and the vessel itself—the prime instrumentality of navigation, of which the machinery is but the moving power, was almost forgotten. Being shipbuilders as well as journalists, it becomes our duty no less than privilege, to review the steam vessel Act of 1852, and point out new elements of safety in the construction of vessels, with the intuitive assurance that the interests of all parties will be found best promoted when identified with greater safety in steam navigation; for insecurity to life must fail to prove a *paying* quality, even in the best appointed "Line."

We propose to furnish our readers with an abstract of the main provisions of the Act above referred to, and such suggestions in relation thereto as shall be presented to our minds at this time. The law first provides for

INSPECTION.

SEC. 1. No vessel propelled in whole or in part by steam, carrying passengers, shall receive papers of license, register, or enrollment, until the provisions of this Act have been complied with.

FIRE.

SEC. 2. Provides, that the "Inspectors of hulls" and the "Inspectors of boilers and engines," shall see that "suitable and safe provisions are made" to "guard against danger from fire." No "combustible material, liable to

take fire from heated iron about the boilers, pipes, or machinery, shall be placed at less than *eighteen* inches from the same, unless a column of air or water intervenes, sufficient under all circumstances to prevent ignition; and when wood is so exposed to ignition, it shall be shielded by some incombustible material as an additional preventive, so as to leave the air to circulate freely between such material and the wood:" "*Provided, however*, That when the structure of such steamers, or the arrangement of their boilers or machinery, is such that the requirements aforesaid cannot, without serious inconvenience or sacrifice, be complied with, inspectors may vary therefrom, if in their judgment it can be done with safety."

This section is exceedingly loose and unsatisfactory, especially in connection with the concluding *proviso*, which modifies the arbitrary distance of eighteen inches, taken as the limit of exposure within which it is safe to bring combustible materials in contact with the heat of boilers or machinery. Nothing but the absence of scientific knowledge regarding the combustibility of various bodies at different degrees of heat, rendered either this arbitrary provision, or its modification, necessary. It must be self-evident, that the laws of combustion require consultation upon the safe limit of proximity of certain materials to bodies radiating given degrees of heat; and when this is done, we may then define in figures something tangible for the guidance of builders and inspectors. The intensity of the heat radiating from boilers, engines, or machinery, and the combustibility of the materials to be guarded from its effects, can be practically ascertained, and thus the limit of proximity be determined; and no "structure" of vessel, or "arrangement of machinery," should set aside the law on account of "inconvenience or sacrifice!"

PUMPS.

SEC. 3. Provides, "That every steam passenger vessel shall have not less than three double-acting forcing pumps, with chamber at least four inches in diameter, two to be worked by hand and one by steam, if steam can be employed, otherwise by hand;" one to be near each end of the vessel and the other amidship, each having a hose at least two-thirds the length of vessel, kept ready for use; each pump to be supplied with water by a pipe passing through the side of the vessel below the light water line: "*Provided*, That in steamers not exceeding two hundred tons, two of said pumps may be dispensed with; and in steamers over two hundred, but not exceeding five hundred tons, one pump may be dispensed with."

Here, again, we discover the weakness of the law. A certain arbitrary number and size of pump is fixed upon for "every vessel propelled by steam, and carrying passengers," which is afterwards cobbled into application to various sizes of vessels by means of a *proviso*, which requires every vessel of 500 tons to provide the same pumping force as the steamship of 5,000 tons, (ten times as large,) and requires no more of the latter than the former, although the voyage of the latter may be made from New-York to Europe, and the trip of the former from New-York to Albany! Nor is the law positive in securing the most efficient working of the pumps, viz.: by steam, in times of danger, but leaves it discretionary whether steam shall be employed or not. In the light of sense and science, the law is wholly wanting in a true basis for adjusting *a uniform system* of pumping capacity, and while it is loose and indefinite, applies very unequally in its requirements upon small vessels, which, from the nature of things, can only be found plying at the present day upon restricted avenues of navigation. It is also deficient in providing an adequate pumping force for the larger classes of vessels.

The only correct principle for establishing a *uniform* pumping force to be required of all vessels carrying passengers, consists in proportioning the pumping capacity to the *displacement* and *draught* of water. It is simply a problem in engineering. All that is wanting is to ascertain the force and capacity required to discharge unequal volumes of water—equal to the displacement of given vessels—of known draught of water, in *equal* times.

The fact is beyond dispute, that the deeper the *hold* of a ship, and the greater its capacity, the greater power required to keep it free, other circumstances being the same. Then let it be enacted, that every steam vessel, carrying passengers, shall be furnished with a steam pumping force and discharge of three gallons per minute, per each ton of displacement, if the draught of water is eight feet or less; and for every foot of draught above eight feet, twelve per cent. shall be added to the aforesaid rate of pumping force and discharge.

If the reader will turn to the series of articles on Tonnage,

in this Magazine, he will soon discover the absurdity of basing any uniform results upon this deceptive farce. The pumping force and discharge should be tested practically, whether worked by steam or by hand. The extreme pumping capability of the largest Atlantic steamers may be stated at two and four-tenths gallons per minute, per ton of displacement, and we may safely assume that the foregoing rate proposed for adoption is not beyond a wise or reasonable margin for security in sea-going steamers. The proper location of the pumps is another important matter. The steamboat Caroline was burned on White River, March 5th, 1854, losing vessel, cargo, and from 50 to 60 lives, in consequence of the origin of the fire being at the after end of the boilers, so that the fire pumps, which were located there also, could not be used! The provisions for *drowning* out a conflagration should be quite as ample as for pumping, and our remarks will apply with the same force to this element of the law.

LIFE-BOATS.

SEC. 4. Provides that every steam passenger vessel shall have at least two good and suitable boats, fitted for use, one of which shall be a *life-boat*, of metal, fire-proof, and in all respects a substantial, safe sea-boat, capable of sustaining, *inside and outside*, fifty persons, with life-lines attached to the gunwale at suitable distances. And every vessel between five and eight hundred tons, shall have *three life-boats;* those between eight and fifteen hundred shall have *four life-boats;* and all vessels above fifteen hundred tons shall have *six life-boats*, furnished, ready for use. *Provided*, That steamers navigating rivers only, may be exempted from the obligation to carry more than *one life-boat*, such steamers having made other *suitable* provisions for the preservation of life in case of fire or other disaster.

It would be gratifying to understand upon what ground *one* life-boat is deemed necessary upon steamers navigating rivers, if *five* can be dispensed with; and what would constitute "other *suitable* provisions" which would warrant this exception to a main provision of the statute? Here again is ample latitude for the judgment of the Inspectors, and insufficient protection to life. Why not define these "other suitable provisions?" which cannot be held to mean three-and-six-penny life-preservers, plank floats, buckets or axes, for preserving the lives of helpless females and children, in the cold waves of the Hudson or the

Mississippi, for these must necessarily be carried; and their insufficiency has been amply tested by the travelling public on recent occasions of disaster. Again we ask, why are these boats dispensed with?

It will also be seen, that the number of life-boats has been crudely proportioned to tonnage; as though the number of lives on board held a defined relation to this deceptive standard! It is notorious, to the man of observation, that many steamboats of 1,000 tons carry double the number of passengers of a steamship of 3,000 tons, registered tonnage. Hence the fallacy of basing life-preserving instrumentalities upon *tonnage*, rather than life itself. Nothing is plainer than this, that in case of deserting a sinking or burning vessel, there should be sufficient boat-room to safely carry all the passengers, to say nothing of their treasure, and provisions for reaching land. Then why not place *life-boat* accommodation on the same footing as berth or state-room accommodation, viz.: the number of passengers? Besides, it would be interesting to passengers, when they book their names and select a berth or state-room, to know which side of a life-boat, the "inside" or the "outside," they would be expected to take if suddenly obliged to desert the wreck! It would prove no pleasant episode to experience the loss of the immersed extremity of the body in the voracious jaws of a shark or alligator—as we think. The law provides that the boats shall each be "capable of sustaining 50 persons, inside and out;" but if it be inquired, *what number will one carry?* the affirmation may be hazarded, that 50 persons never yet were saved by one boat, and we think never will be, inasmuch as this number is too many, either for safety or the navigation of the boat. It is quite fair to assume, that one-half the nominal number are sufficient to load any ordinary life-boat, as now built. Having air-chambers in the ends only, which are raised by the sheer many inches above the lowest part of the gunwale, and wanting also in breadth for stability under great loads in rough water, it would be dangerous for them to attempt to carry and *tow* 50 persons. We not only say the nominal rate of life-boat capacity is vastly over-estimated, but that they require a greater proportion of breadth, with additional air-chambers *along the sides.*

LIFE-PRESERVERS, BUCKETS AND AXES.

SEC. 5. Provides that every steam passenger vessel shall be provided with a good life-preserver, or float, for each passenger, which life-preservers and floats shall always be kept in convenient and accessible places, in readiness for use; and such vessel shall also keep 25 buckets and 5 axes; and every such vessel above 500 tons shall keep on board buckets and axes after the rate of their tonnage, as follows: on vessels of 600 tons, five buckets and one axe for each hundred tons, decreasing this proportion as the tonnage of the vessel increases, so that any such vessel of 3,500 tons, and all exceeding the same, shall be required to keep but three buckets per hundred tons, and but one axe for every five buckets.

It cannot be doubted that life-preservers have proved valuable aids in the preservation of lives, and it is no less true that they have sometimes proved worthless. They are not always sufficiently tested, which is the fault of inspectors, since it is their business to see that all the provisions of this Act are in good faith observed.

SEC. 6. Provides that every steam passenger vessel, carrying passengers on the lower deck, shall have sufficient means of escape to the upper deck, in case of any accident endangering life.

We have frequently seen the deck referred to, so fully blocked up with freight, luggage and deck passengers, that it would be almost impossible for a large portion of those below to escape to the upper deck in a sudden emergency; or in case of fire, it would be almost impracticable to work the hose, or pass the buckets. Panic, confusion, and increased loss of life, would inevitably follow any considerable disaster under these circumstances. Against the danger arising from overcrowding the decks with freight and passengers, the law makes no provision. Suppose permission be granted to carry a given number of deck or steerage passengers, no provision secures to them their allotted deck-room accommodation; but this is too frequently stored with freight, and the unfortunate emigrant is crowded into the gangways, to the inconvenience of passengers and crew, and the danger of all in case of accident.

INFLAMMABLE LIQUIDS AND MATERIALS.

SEC. 7. Provides for their transportation and storage.

SEC. 8. Provides that gunpowder, oil of turpentine, oil of vitriol, cam-

phene, or other explosive burning fluids, and materials which ignite by friction, when put up for shipment, shall be securely packed, separately from each other and from all other articles, and the package, box, cask, or vessel containing the same, shall be marked with the name of the article thereon. The penalty for violating this regulation for the shipment of inflammable liquids or materials on steam passenger vessels, is for a misdemeanor, and consists in a fine not exceeding $1,000, or imprisonment not exceeding eighteen months, or both.

It is singular, in view of these wise precautions, that the carrying of open lamps, as lights, about various parts of the hold and machinery, to say nothing of the practice of smoking, was not likewise forbidden under penalty. We have heard engineers declare that they have stood in constant dread of fire through the carelessness of coal-passers, and others, who are permitted to carry uncovered lamps about their work, in the hold and other parts of the ship. The law should also forbid smoking, except perhaps in the saloon, or upon the upper deck. The loss of more than one fine vessel, and many lives, have been due to this dangerous practice.

QUALIFICATIONS OF INSPECTORS, AND THEIR DUTIES.

SEC. 9. Provides that the chief officer of the customs, together with the supervising Inspector, and the Judge of the District Court of the United States for the district, in each collection district, shall designate two inspectors of good character and suitable qualifications, to perform the services required of them by this act; one of whom, from his *practical knowledge* of *ship-building* and the uses of steam in navigation, shall be fully competent to make a reliable *estimate* of the strength, seaworthiness, and other qualities of the hulls of steamers and their equipment, deemed essential to safety of life when employed in carrying passengers, to be called the Inspector of Hulls; the other of whom, from his knowledge and experience of the duties of an engineer employed in navigating steam vessels, and also in the construction and use of boilers and the machinery therewith connected, shall be able to form a reliable opinion of the quality of materials, strength, form, workmanship, and suitableness of such boilers and machinery, to be employed in the carriage of passengers without hazard to life, to be called the Inspector of Boilers; and these two persons, if approved by the Secretary of the Treasury, shall be empowered and required to perform the duties to be specified, to wit:—

FIRST. *Of the Hull and Equipment.*—Upon application in writing by the master or owner, they shall, once in every year at least, carefully inspect the hull of each passenger steamer belonging to their respective districts,

and satisfy themselves that every such vessel, so submitted to their inspection, is of a structure suitable for the intended service, has suitable accommodations for her crew and passengers, and is in a condition to warrant the belief that she may be used in navigation with safety to life, and that all the requirements of law in regard to fires, boats, pumps, hose, life-preservers, floats, and other things, are faithfully complied with; and if they deem it expedient, they may direct the vessel to be put in motion, and may adopt any other suitable means to test her sufficiency and that of her equipment.

This is the whole extent of the inspection for hulls; and it is from this superficial examination of structure and qualities that the inspectors are required to form "a reliable estimate of the *strength* and *seaworthiness*" of the steam passenger vessel. From this slight investigation, made on board at the dock, they are expected to pronounce whether she is "staunch and seaworthy, and in good condition for navigation," as required in the certificate.

We shall see that boilers are required to be *tested* and found *able* to withstand defined amounts of *pressure*, before judgment is entered in their favor; but what have we to rely on in the case of hulls, beyond the fallible *opinion* of men, whom, if incompetent to "estimate" the strength and safety of boilers without hydrostatic tests, possess no royal powers for collating the secrets which will "warrant the belief," in any enlightened sense, that a given vessel is "staunch and seaworthy." The dreadful loss of life and property by disasters at sea arises in most part from the great lack in strength and seaworthiness; and it is strange that we should pay such little heed to the solemn warnings of shipwreck, as to fail so signally in gathering wisdom from those heart-rending admonitions of experience, teaching the necessity of securing the adoption of *vital principles* in marine structures. The inventor of the life-boat was once thought to be an astonishing man; but the day is coming when it will be wondered why a ship was ever anything else. It is said of the Chinese, that the origin of roasting pigs—a favorite mode of cooking—was in the burning of a house; and for many years after this discovery in the culinary art, indulgence in this delicacy caused the loss of a house by fire, until an extraordinary genius arose in the land, who taught his brethren that they could be roasted by other means. Even so with com-

mercial nations in the luxury of saving dollars. The slightest accident at sea causes the destruction of a ship and hundreds of valuable lives. We therefore propose, that

Sec. 9. Duty the first be amended, by adding after the words, "are faithfully complied with," and before the words, "and, if they deem it expedient," the following provision, to wit:—*And it shall also be their duty to classify all* steam passenger vessels into first and second classes, and shall regard as *first* class, such vessels only as shall have their holds so divided into compartments by longitudinal and transverse bulkheads, so that no compartment shall contain more than one-sixth of the vessel's hold; and said bulkheads forming such compartments shall be of plate iron, firmly secured to the bottom and deck-frame of the vessel, and to be kept water-tight; and in each of which such connection of the pumps shall be made, as will enable the entire pumping force of the vessel to be applied to either of said compartments whenever necessary. *Provided*, That all new steam vessels hereafter built with reference to the carriage of passengers, or the mails, shall be made first class, according to the requirements of this act.

So much with regard to the strength of vessels. In relation to seaworthiness we wish to inquire, What constitutes the basis of the Inspectors' opinion? By what rule shall they determine the measure of safety or insecurity, arising from the "*form, materials,* and *workmanship*" of vessels? Congress has afforded no guide for the Inspectors or the public.

Upon the present occasion we dare not withhold our conviction, that *instability* is a prolific cause of shipwreck and loss of life at sea; and were it necessary, several examples of the loss of steam passenger vessels might be cited to demonstrate this fearful truth. Nothing is farther "from seaworthiness" than a *rolling* ship. The fearful lurches from side to side, straining engines, machinery, and rending asunder every joint and seam of the devoted hull, have told many a tale of horror, which has been ascribed to the "hurricane" or the "tempest" rather than to the *narrow-bottomed, cockle-built ship.* Nor is it sufficient to provide a bottom capacious enough for the safety of the hull merely. The centre of weight of cabins, machinery, and rig, are almost always found above the centre of displacement, and a still greater breadth is demanded in order to perform the equilibriating motions of the sea with ease and safety.

We are advocates of uniformity and fair play. Under an ex-

clusive system of careful inspection for boilers and machinery faithfully carried out, the hull may prove by far the most dangerous of the three, although equally well inspected according to the present superficial law. A correction of the Tonnage Laws for the admensuration of vessels, would of itself promote the adoption of greater breadth in vessels of more decks than one, and greatly conduce to safety.

SECOND. *Of the Boilers.*—The inspectors shall also inspect the boilers of such steamers before being used, and once in every year thereafter, subjecting them to a hydrostatic pressure not exceeding 165 pounds to the square inch, for high-pressure boilers, as may be prescribed by the owner or master, and shall see that they are well made, of good material; that all openings, pipes, and tubes, are of proper size, and free for use; that the flue spaces are sufficient, and the fire-line of furnace below the water-line of boilers; that such boilers, machinery, and appurtenances may be safely employed in the service specified; that the safety-valves are of suitable dimensions, sufficient in number, arrangement, and performance, (one of which may be taken from the control of all persons navigating the vessel); that there is a suitable number of guage-cocks, with a water-guage and steam-guage; that in or upon the outside flue of each outside high-pressure boiler there are placed alloyed metals, fusible by the heat of the boiler when raised to the highest working pressure, and that in or upon the top of the flues of all other high-pressure boilers, such alloyed metals are placed as aforesaid, fusing at ten pounds greater pressure than said metals on the outside boilers, thereby letting steam escape; and that adequate and sure provision is made for supplying water to the boilers, whether running or not, so that in high-pressure boilers the water shall not be less than four inches above the flue: *Provided, however*, in steamers hereafter supplied with new high-pressure boilers, if the alloy fuses on the outer boilers at a pressure of ten pounds above the working pressure allowed, and at twenty pounds above said pressure on the inner boilers, it shall be a sufficient compliance with this Act.

By a late rule of the supervising inspectors, no mode of application of fusible alloys shall be approved in which such alloys shall be exposed to the *pressure* of the steam.

TESTING BOILERS.

THIRD. That in subjecting high-pressure boilers to the hydrostatic test, the Inspectors shall assume 110 pounds to the square inch as the maximum pressure allowable, as a working power for a new boiler 42 inches in diameter, made of inspected iron plates at least one-quarter of an inch thick, and shall rate the working power of all such boilers, of greater or less diameter, old or new, according to their strength by this standard; and in

all cases the test applied shall exceed the working power allowed in the ratio of 165 to 110, and no high-pressure boilers hereafter made shall be rated above this standard. In testing low-pressure boilers by the means aforesaid, the inspectors shall allow, as a working power of each new boiler, a pressure of only three-fourths the number of pounds to the square inch to which it shall have been subjected and found sufficient therefor, using the water in such tests at a temperature of 60 degrees Fah.; but should they be of the opinion that said boiler will not safely allow so high a working pressure, they may fix the same at less than three-fourths of said test pressure, and no low-pressure boiler hereafter made shall be rated in its working pressure above the aforesaid standard; and provided, the same rules shall be observed in regard to boilers heretofore made, unless the proportion between such boilers and cylinders, or some other cause, renders it manifest that its application would be unjust, in which cases the inspectors may depart from these rules, if it can be done with safety; but in no case shall the working pressure allowed exceed the hydrostatic test, and no valve shall be so loaded as to subject a boiler to a greater pressure than the amount allowed, nor shall any boiler or pipe be approved which is made of bad material, or is unsafe in its form, or from defective workmanship, age, use, or any other cause.

We have now completed the details of inspection when the certificate may be subscribed to by the Collector, and the vessel admitted to service in the carriage of passengers. We forbear to go further with the analysis of this Act at this time, having already occupied a large space upon the most important sections. In the inspection of boilers we have seen a scientific degree of minuteness relating to every particular, while the vessel itself has been left almost untouched, as though the arms of the law dared not grapple with the colossal fabric. The strength and construction of vessels is, to say the least, equally momentous as that of boilers in securing safety to life upon the tempest-ridden ocean, which bids defiance to the stanchest monuments of art to match the fury of its unabated strength, when hurling death at the defenceless barque.

ACCIDENT TO THE STEAMER GOVERNOR.—The steamer Governor (from Portland to Eastport) broke her crank on the 13th Nov., about eight miles off Moose-peccy Reach. It blew a gale at the time, and in the darkness and storm, the boat was entirely unmanageable. Capt. Wood made the saloon carpet into a sail, that enabled the boat to live out the night, and anchor near Libbey's Island in the morning. The incident calls out severe and just comments on the part of the press, that a boat should be allowed to run on so perilous a coast, with no sail to manage her in case of an accident like this.

IRON VERSUS WOODEN SHIPS.

At a late meeting of the British Association for the Advancement of Science, an important discussion took place relative to the comparative trustworthiness of compasses on board iron ships. During the debate it was shown that careful investigations conducted by Dr. Scoresby, and other scientific men, tended to establish the fact, that the variations of compasses are nearly unavoidable on board of iron vessels; that except where azimuth or mast-head compasses are used, there is no safety whatsoever; and that even with both of these, observations cannot be taken too often, or too much care exercised. Facts were adduced to prove that particularly in certain latitudes, and under certain conditions of the vessel itself, compasses will unavoidably vary, and out of many on board an iron ship, no two will agree. In the case of the iron steamer "City of Philadelphia," Capt. Leitch had taken observations of the sun each day from the time he left Liverpool until the day preceding her loss upon Cape Race. On that day the weather was foggy, and trusting to his compasses, he lost his course; and notwithstanding his skill as a navigator, the ship was wrecked.

As might be anticipated, such a grave discussion upon the comparative safety of iron ships gave rise to a rapid interchange of views among the British Scientific and Commercial Journals; and we are informed that the rates of insurance on iron ships immediately rose in consequence of the statements made at this meeting. The merchants of Liverpool became so anxious about the matter that Dr. Scoresby, whose observations, mainly, had caused the alarm, was requested to repeat his observations, which he did, and was then earnestly consulted for a remedy. This was going beyond the sphere of the Doctor's investigations, for he found it easier to declare the danger than to provide a security against it, and the consequence has been to leave an unfavorable impression upon the public mind regarding the safety of iron ships upon long voyages. The influence of a large body of iron upon compasses had been previously well known, but the danger and extent of that influence had never before been so prominently discussed.

When we examine the extent to which the manufacture of iron vessels has been carried in Great Britain, we shall be at no loss to comprehend her solicitude for a knowledge of the momentous bearings of this question. In that country the manufacture of iron has increased from 678,000 tons in 1830, to 2,250,000 tons in 1854. The increased demand for this staple product of England has arisen, in late years, not only from the construction of railroads in the United States, but from the enormous quantities manufactured into *shipping* in that country.

In the United States comparatively few vessels have been built of iron, inasmuch as wood is so much cheaper, if not better, as a material. This is not the case in Great Britain, where, perhaps, iron ships can be built at nearly the same cost as wooden ones.

But while British ships of iron construction have been rapidly increasing in the ratio of numbers, it is no less true that American ships have been rapidly adopting the advantages of a partial iron construction, during the past five years. And it is manifest to the inquiring architect, that with a further increase in the *size* and *strength* of our ships, a still greater demand will be made for the lion of metals in marine consumption, of which our country has an abundant supply. For the past ten years the import of iron into the United States has increased from $2,395,000 value, to the huge sum of $27,000,000; no inconsiderable quantity of which has found its way into the machinery, hulls, and outfit of our steam and sailing vessels. Nor can we entertain a doubt, that in proportion as we have adopted the *liberal* use of this life-giving metal in the construction of our varied marine, increased strength, durability, and efficiency have marked the wisdom of our course. Therefore, while British ship-owners may find it to their interest to adopt an almost exclusive iron construction for home-built ships, American merchants will perhaps discover that a wise combination of wood and iron is best adapted to our wants.

But while it may be said, that the commercial men of Britain are most deeply interested in the question, whether iron can be safely used exclusively for ship-building, while our present imperfect means of guarding against the variation of compasses

by local attraction involves the loss of life and property to such a fearful extent, it cannot be denied that our builders, owners, and underwriters likewise, stand interested.

We, however, are of the opinion, that a mixed construction of wood and iron, to which ship-building is fast tending in the United States, will not be found subject to the perils of variable compasses, which are shown to be inseparable from iron ships; and it becomes a question of vast import to England, whether it is possible to overcome this difficulty.

The circumstance that iron ships of mammoth dimensions are now on the stocks in that country, intended to establish a rapid steam communication with Australia, has also given an enlarged consequence to this subject, since it is now inferred that such enormous bodies of iron will prove even more influential in disturbing the equilibrium of the needle; and if so, it follows, that the accomplishment of this great enterprise becomes doubtful. This conclusion has been founded on the assumption, that this trade demands gigantic steamships, and these can only be built sufficiently strong of iron. The reason assigned for so greatly enlarging Australian or Indian steamers is the necessity for carrying a sufficient supply of fuel for the voyage, out and back; and since it is thought impracticable to construct wooden vessels of the requisite capacity, it becomes chimerical to undertake the building of such large vessels at all.

This reasoning results in this: vessels of extraordinary size must be built of iron, but these will not answer, on account of the *compasses;* wooden vessels will answer as heretofore, but they cannot be constructed of sufficient size with *safety.*

Is it, then, the little magnet of the mariner, which has for so many years piloted his barque in triumph through every sea, that now points out a limit to man's ambition in ship-building? Does the great problem of encompassing the ocean in a lunar period by steam, fly away to the winds upon the attractive impulses of the mysterious needle? Is this so, or have we paused for *knowledge?* If these voyages are required for the legitimate extension of commerce, and ships of extraordinary magnitude are demanded, they *must be furnished.* We are of those who hold that projects of real utility are quite possible; and, indeed,

we know of no reason to despair of constructing a steamer of 10,000 tons, for the purpose under consideration.

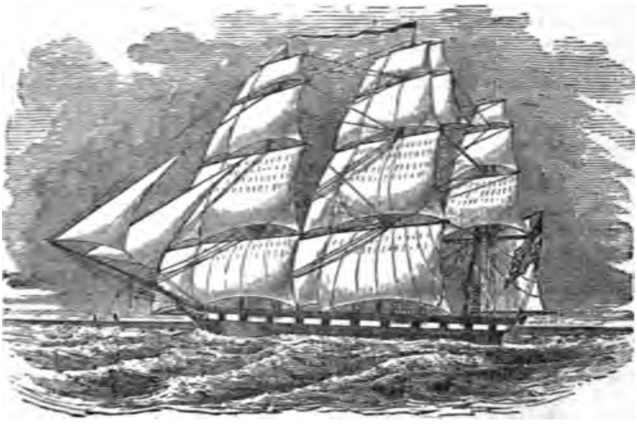
If the compass refuses fidelity to an *iron hull,* let our British friends bring their purse over to America, and our ship-builders will give them one of *wood.* A superior wooden frame and plank, with *kelsons of iron, from bottom to deck,* would furnish sufficient strength, and avoid the dangerous accumulation of iron in the sides of the ship. This mode of construction would be less expensive, at least in the United States, and would only require a generous outlay of skill and capital to obtain any amount of strength and safety desirable; and we would not stop of rendering the ship, itself, a *life-boat—fire and water proof.* The wanton folly of constructing sea-going vessels, of any considerable size, to carry passengers, mails, or even valuable freight, upon any other principle, will yet become apparent, not only to the philanthropist, but to the prudent business man. Again we say, Australian steamers *can be built,* and a mixed wood and iron construction will prove the best.

The Shipwrecks of 1853.—From the Admiralty returns recently printed, it appears that in the year 1853, there were 832 vessels wrecked on the coast and in the seas of the United Kingdom. Of these, 369 were totally wrecked, 52 were sunk by collision, 386 were seriously damaged, and had to discharge their cargoes, and 25 were seriously damaged by collision. The greatest number of wrecks, 423, occurred in December, and the fewest, 26, in June. 253 wrecks occurred on the east coast of Great Britain, 65 on the south coast, and 130 on the west coast; 81 wrecks took place on the coast of Ireland; 6 vessels were cast on shore at Scilly, 11 at the Channel Islands, 3 at Orkney and Shetland, and 12 at the Isle of Man.—*Ex.*

The Great Navies of the World.—The following is the number of vessels comprising the first five important navies of the world, with their weight of metal:—

English	667	vessels	18,330	guns.
French	328	"	7,144	"
Russia	170	"	5,896	"
Dutch	102	"	2,318	"
United States	60	"	1,039	"
English force	667	"	18,330	"
Force of France, United States and Russia, and Holland, combined	660	"	16,397	"
In favor of England	7	vessels and	1,933	guns.

Nautical Department.



OCEAN STEAM NAVIGATION.

BY R. B. FORBES, OF BOSTON.

THE terrible fate of the Arctic and the loss of so many valuable lives, is a theme about which too much cannot be said at this juncture, while the public heart is bleeding.

This calamity must be discussed in all its bearings, and in doing this something must necessarily be said which will inflict pain; but the wounds must be probed in order to ascertain their depth, and in order to suggest the means to guard against similar accidents.

I shall endeavor to discuss the subject with a practical eye; and as I have no prejudices to overcome and no interests of a private nature to serve, I hope that what I shall say will be considered as impartial, and as emanating solely from a desire to contribute my mite to the preservation of human life and the mitigation of the sorrows of the sea.

I have had some experience in the dangers of the sea, and whether deserving the title or not, I am considered an "expert" in maritime affairs, and am expected, on this occasion, to say something. After the loss of the Amazon, by fire, early in the year 1852 or late in 1851, I addressed a letter to the *Boston Daily Advertiser*, dated 10th February, 1852, which was published, and also extensively forwarded by circular to all those who had any interest in steam navigation and packet ships. The letter was no doubt extensively read and soon forgotten. This does not deter me from publishing anew the material portions which have a bearing upon the recent calamity:—

"I have made several passages to and from England, and to and from China, and have had the good fortune to go and come in fine ships, well commanded, and well manned, and in nearly all cases (certainly all on this side of the Isthmus of Suez) I have found the organization nearly perfect as regards the *ordinary* routine of duty, both in the duties of captain, officers, engineers, and stewards, but I must say that in all my travels by sea, in steamers, *I have not sailed in one* where I con-

sider the organization *complete* for cases of sudden alarm, by collision, grounding, or fire. While I entertain a personal regard for every captain, and with one or two exceptions, for all the officers, I have had occasion to travel with, and while I accord to them full credit for the qualities which constitute good seamen and gentlemen, I feel that I should not be doing the subject justice, did I not point out in plain terms wherein the custom, or habit, of the service has led them to neglect to prepare their boats and crews by stationing them and by occasionally exercising them, so that on a sudden alarm, real, or only for the purpose of exercise, the men would, at a given signal, instantly proceed to their stations, and be prepared for any emergency. The ordinary routine of a steamer may be neglected without serious accident, the watches may be relieved a few minutes too late, or too early, and in the event of a want of order, in the daily duty, no very serious consequences would *necessarily* arise, but in a sudden alarm, it is absolutely vital to have *organization, discipline*, to insure any approach to concert of action; what would become of the crew of a ship of war, consisting of several hundred men, without discipline in cases of emergency, and particularly in case of fire, that element most to be dreaded at sea?

"In case of any such alarm, the crew is usually called to 'quarters,' that is to say, every man goes to his place at the call of the bugle, or the roll of the drum.

"In every well-regulated steamer, every man should have a station for sudden emergencies, and he should be reminded by sounding the signal (after due notice to the passengers) occasionally, so as to make him familiar with his place.

"In several steamers I have sailed in, I have seen a 'quarter bill' posted up, where all hands, as well as the passengers, could see it, and in it the places of the men were designated, and particularly for the usual and ordinary duties of the ship; I have seen the crews of several ships mustered on Sunday, and examined as to their names, cleanliness, &c., but in all my experience I have never heard of a merchant steamer's crew being mustered for stations for fire, collision, or on a general alarm. * * * * * * * *

"The organization should not only be complete as to the stations of the officers and crew, but the stewards and servants should have certain specific duties to perform, and there should *always* be some small casks of water, some canisters of provisions, and other necessaries placed in some convenient locality, ready for such emergencies."

The general suggestions contained in this letter cannot be too often repeated. I would remark in addition to what is therein said, that it is of paramount importance, in order to carry out a plan of organization, to have more petty officers, more trusty and well-tried seamen. These can only be secured in our Atlantic steamers by giving extraordinary encouragement to good men to remain by the ship. The excuses now are, and I regret to say that in American steamers and packet ships they are valid to a certain degree, that "we cannot get men in these short voyages that will stay by us. We leave New-York oftentimes with firemen and seamen whom we have never before seen, and whose names we do not know, and they scarcely know under what names they have shipped. By the time we get fairly to sea, and begin to think of getting matters into ship-shape order, we find ourselves on the other side. In fact, all our time and all our energy are expended in taking in and making sail, steering the ship, keeping a good look-out, cleaning ship, and the usual duties of the sea. We have no time to drill green hands, or seamen who are strangers to us, in matters relating to boats; we do not expect to run anybody down, and we really cannot undertake to neglect the daily routine of ship's duty for the purpose of drilling strangers for emergencies which may never happen."

Another tells me that "Congress is at fault. The disasters of the sea are in a great degree attributable to the absence of power to enforce prompt obedience to the *ordinary* duties of the ship, to say nothing of the *extraordinary* duties devolving on us in cases of great emergency."

There is much in these excuses; they are not unreasonable; our legisla-

tors have deprived the masters of the power to enforce discipline, and the public expects from the commander in times of emergency the greatest self-possession and coolness. The public demands that the steamship, aye, and the sailing packet, shall make the quickest possible run, deliver her living or inanimate freight in the best order ahead of all competitors, and this must be done by a physical power only brought together for the first time a week since, and wholly dependent on moral suasion for its government. With such elements as we have to deal with, I submit that this is asking too much. But let me not dwell too long on the existing evils. I must come to the remedies and other matters. It is sufficient to say in regard to the speed of steamships in thick weather, that the public voice insists on speed, and I am ready to sustain this verdict for several reasons. At a high rate of speed the time of danger and the chances of collision and of damage by gales of wind are lessened, and last, not least, the danger to the steamship and her crowd of passengers, in case of meeting an obstruction, is not so great as at a slow pace, and besides this, she can be more readily controlled by the helm, and more distinctly heard by sailing ships. These are among the principal reasons for going at full speed in fogs, when the wind is usually moderate.

Much blame was attributed to the Europa for going at full speed when she ran down the Charles Bartlett, in 1849—for my part, I think our speed saved us who were on board; had the ship struck us where the Arctic was struck, the Europa would most probably have been where the Arctic now is, at the bottom of the sea, and there would have been very few from either ship to tell the tale! Much blame is attributed to Capt. Luce for doing exactly what the *proprietors* of all the Atlantic steamers try to do, and boast of when done: namely, to make the shortest passage, to beat all competitors. If it is really criminal to run in fogs across the Banks, the proprietors of steamers should be punished first, the law-makers next, and the government (for insisting that the mails shall be carried quickly) must not be forgotten; the poor captain who stands shivering on the bridge or the paddle-box for many days and many nights, trembling for the safety of his passengers, and endeavoring to please their every whim, should be the last to be punished for going fast, even if it were more dangerous than to go slow.

I say, then, "go ahead" when you know where you are, and sound frequently when you do not. Sometimes fogs prevail for days at a time, and in certain locations, where there is the most danger of coming in collision, even for weeks; suppose the Atlantic steamers and packet ships should by common consent, or by force of law, determine that five or six knots must be the limit of speed in foggy weather, and that bells must be rung and whistles blown, and guns fired! What a splendid accumulation of dangers would be present! To my mind, the dangers of the sea would be vastly increased. The captains would not stand it long, and the way they would get over the difficulty would be by *making the knots of double length, and then go ahead.*

But there are certainly some things to be done, and as I am not disposed to find fault without suggesting remedies, I will now undertake to do this.

A certain number of picked men should be kept in the steamship, at whatever cost, and they should be sufficient in number to steer the ship, to keep the look-out, and to have charge, under the mates, of the boats, pump, gear, and life-saving apparatus. Each boat should have a regular crew, each man to know his place in the boat, each boat should have a set of oars and some spare oars, and be in all respects a *life-boat*, and she should be provided with a mast and sail, compass and lantern, water breaker, and hand-port fire, and in some convenient and well-known locality a supply of stores

should be placed marked, and kept ready for each boat. It is not necessary to provide roast turkey and plum pudding, nor chronometer and theodolites, but a small supply of imperishable provisions in canisters, ready for emergencies. While on the subject of boats, I must speak at length of the means of lowering them, and of the best kind of boats.

In the *English Nautical Magazine* for July, 1854, will be found a sketch and description of a very good *auxiliary* boat for steamers and sailing ships carrying large numbers of passengers. They are termed "collapsing boats," and were invented, perfected and patented by the Rev. E. L. Berthon, M. A., of Fareham, England. The *Nautical Magazine* says they have received the unqualified approbation of the best-informed officers of the royal and merchant navies, and adds:—

"As life-boats, these new and really beautiful structures are second to none in an essential quality: they are perfectly insubmergible, handy, lively, and surpassingly fast under sail, and more weatherly than any other description of boat; at the same time their collapsibility is so great that a boat ten feet wide, when closed, may be stowed in a space only eighteen inches in width. When required, their expansion is instantaneously effected by the weight only. Their enormous extra buoyancy and insubmergibility are obtained by a vast volume of air contained in many separate air cells or compartments, which inflate themselves in the act of opening. Should an accident happen to any part of the boat, it involves the destruction, at the worst, of that compartment only upon which the injury was inflicted, while the others, remaining intact, are more than enough to keep the boat lively."

This boat, although costly, will be found very effective on account of the small space it occupies.

The Francis Metallic Boat is well known and extensively used; it is a very durable and very useful boat for ships, but is not so effective as it would be if the end chambers were furred off from the boat herself and entirely distinct from the same, as in case of making a hole in or staving the end, the boat is at once next to useless. This improvement should be insisted on, although the cost will be slightly increased as well as the weight, and the strength of the ends will be slightly diminished; but this can easily be compensated for by additional strengthening pieces.

Another very valuable metal boat is built in New-York. This boat I should imagine to be fully equal in strength to Francis's Boat, and with the improvement suggested for that boat, namely, having her end and side chambers detached from the shell, but securely lashed to the gunwale and thwarts, I should give her the preference, for the reason that she is rather lighter, and has the very great advantage of more internal buoyancy, inasmuch as she has the inside chambers as well as end chambers, and delivering valves, by which any large quantity of water coming suddenly into her would very soon run out.

The Staunton Life-Boat consists of any light pink stern boat, supplied with floats of large capacity, at each end inside, and long cylinder floats lashed to strong battens outside, just below the gunwale, and to these may be added other floats under the thwarts. These floats should be made of stout vulcanized India rubber cotton canvas, made in the most approved manner. They are inflated by bellows in a few minutes, but may be inflated by the mouth in case of accident to the bellows.

The Staunton boat cannot easily be stove alongside a ship, not so easily as a boat without the outside floats, and cannot well be capsized in lowering, or by the sudden clinging to her gunwale of struggling persons, and if stove, she can still support many persons. This is a good life-boat, inasmuch as the floats applied to any ordinary boat make her a life-boat. The

Massachusetts Humane Society have more than thirty of these boats on the coast of Massachusetts, and when used by experienced beachmen, they have been found most useful in saving life. They are open to the same objections that apply to nearly all boats—they will suffer much by neglect and stupidity, and must wear out faster than metallic boats if neglected. But there is one very important consideration in them, and that is, if the floats hold wind, or remain inflated, you know you can trust them until they become ruptured, and in case of staving the end of your boat, you can remove the float, stop the hole at once, if not too large, and by replacing the float make all right; whereas the metal canister may have a hole in it which cannot be known by the collapsing of the same, as in the case of India rubber floats. On the whole, I prefer the light lap-streak cedar boat, fitted after the Staunton plan, to any ordinary life-boat. But every steamer in the Atlantic trade should have at least two large life-boats thirty-two feet long and about eight feet beam, lined with cork and fitted with life-lines, India-rubber buckets for baling, compass, port fires, water breakers, and other apparatus. Besides at least six life-boats, capable of carrying at least forty persons on an average, all large ocean steamers ought to be provided with half a dozen vulcanized India-rubber *pontoons*, say twenty to twenty-five feet long, and from eighteen inches to two feet in diameter. These pontoons, when collapsed and stowed away, would not occupy together more space than a small boat, and could always be kept in chests on deck, ready to be inflated and formed into rafts, or be attached by lines passing under the boats, so that for an emergency like that of the Arctic, the boats could be increased in capacity, so as to *sustain*, if not accommodate, a hundred more passengers; these pontoons may be made of any required size, and would vastly increase the chances of saving lives. A very valuable auxiliary boat, or scow, has been invented by Mr. Tewksbury, of Boston. Several of these floats, or boats, may be carried by a steamer in a very small space, as they are perfectly flat when the sides and ends are not put in place: suppose the bottom to be made of double inch boards with lap joints, made tight by calking, or by inserting thin India-rubber cloth between the boards; the bottom to be twenty feet long by six feet wide; the sides say two feet high, hinged, or attached to the bottom by strong India-rubber canvas; the ends of similar height, and hinged in the same way; the corners to be gores, or segments of circles of the same material, so that when the ends and sides are not fastened in place, the whole may lay flat on the deck, and when "rigged," the ends and sides assume the shape of an old-fashioned chopping tray. This arrangement makes a very light, tight, and strong boat, float, or scow, that would contain at least twenty persons, and very safe for *smooth water*. It would not answer for a surf-boat, nor for heavy seas, not so well as a fine modelled life-boat, but it would be a most valuable and simple auxiliary float for disasters similar to that of the Arctic.

As to other means for the better preservation of life, there are many floats styled life-preservers. Very few of these contrivances are of much value to persons who are panic-stricken. The India rubber-floats are often cheaply made, and their fastenings and valves are generally sadly defective; and as they are seldom proved on board ship, by inflating them, the hapless passenger oftentimes finds them wanting in strength and buoyancy when the crisis comes. Metal canisters of various forms have been recently got up in order to meet the requirements of the Act of Congress. The most valuable of these floats is the invention of a Mr. Fitch, and is made by W. O. Haskell, Boston. Having tried it in the water, I speak understandingly when I say that it is next to impossible for a person to drown in tolerable smooth

water with one of these fixtures properly applied. The Tewksbury seats are also valuable, particularly when two or more are lashed together; singly, they are something like Columbus's egg, which was easily made to stand on its end when the process was understood. In regard to these stools, I have seen a strong seaman nearly exhaust himself by attempting to get his body balanced upon it, while I am confident that I could sustain myself for hours with one of them in a smooth sea and without exertion, provided the temperature of the elements was not too low. But the best of all these floats which I have seen, is an invention of a New-York engineer, Mr. Thompson, which consists of a comfortable chair, which, when opened or expanded, makes a most desirable life-preserver. This seat should be put on board of all steamers and passenger ships, particularly on rivers and other narrow waters. It is more expensive than any of the life-preserver seats, but this should not prevent its general adoption.

The Cartes Life-Preserver is an English invention, and is a most valuable one: it consists of a circle or ring of cork shavings, covered by painted canvas large enough to go round the body under the arms, and having sufficient buoyancy to support a full-sized person. The great merit of this float consists in its simplicity and in its being always ready, that is to say, always buoyant, and requiring no inflating; this quality is shared by the metal floats, but you are never quite sure that they are perfectly water-tight.

All these body floats require fastening to the body, and are often entirely useless on account of the want of a little coolness or tact of adjusting them. Whatever body floats are used, every state-room should be supplied with drawings of them, and full directions for their use—true, the agony of life may be prolonged only for an hour, or less, and life cannot be insured by any life-preserver: but in a case like the Arctic, many might have been saved, especially if the boats had been in sufficient number, hovering about when the ship finally sunk. While on the subject of floats and life-preservers, I would strongly recommend that every state-room door on board of steamships and river and lake boats, or others carrying large numbers of passengers, should be hung on "pintles and gudgeons," and have for a centre panel a metal box, three or four feet long by one or two feet wide and about two inches thick, so that in the event of a sudden fire, like that on board the Ocean Monarch, or the river boat Henry Clay, and the lake boat Atlantic, lost on Lake Erie, or in the case of the Arctic, they would serve temporarily to prolong life until assistance could be rendered. Many, many lives have been lost, in my short day, for want of means to support life for an hour or less.

Various methods are in use for safely and quickly lowering boats. The most simple one is to have a strong pendant at each end of the boat, which, by passing over a cleat on the davits, sustains the boat when once hoisted up by the tackles, which are then unhooked. When the boat is to be lowered, it is done by the pendants, which may be both suddenly let go, releasing the boat from the ship, or the after one may be let go and the forward one may be used as a painter. These pendants must be long enough to permit the boat to reach the water, and strong enough to sustain her. The usual difficulty is in clearing boats from the tackles simultaneously, and it often happens that the bow tackle is unhooked, and the stern tackle fouled by the boat swinging round. Another method of detaching a boat, in use in England, is by having a rod running along the boat under the thwarts, to part of which the tackles hook; now, by turning a handle or lever at the centre and above the thwarts, the tackles are simultaneously unhooked or cleared. This must necessarily be done by a man stationed at the lever. This method of detaching boats can only be fully explained by drawings.

Having said enough on the subject of floats and what are called "Life-Preservers," I come now to speak of other means tending to avoid collisions on the ocean during foggy weather and dark nights. There is a great diversity of opinion among nautical men of experience as to the propriety of making night hideous to the passengers, by sounding the bell, blowing horns, firing guns, and shrieking through the steam whistle; some contend that perfect silence is the best thing for *self*, and there is no reason why self should not be cared for first in this particular: for my part, I think that the steam whistle systematically and regularly blown during fogs and thick, dark nights, is the safest and best thing; but in order to make it effective in ocean steamers, there should be a rule that one blast at intervals of five or ten minutes should denote a westerly course, two blasts an easterly course, and three blasts a southerly, and four a northerly course. This would be simple enough for Atlantic navigation, as Atlantic steamers in given localities are not beating about on diverse courses, like sailing ships. If the whistle could be conveniently contrived so as to blow its blast directly ahead, it would be better than to do so upwards, as is usual. I cannot imagine any serious objections to this plan, though it would unquestionably be a discomfort to nervous passengers, but it would assure them that the ship was giving warning to approaching ships; sounding a bell, unless it be of very large dimensions, would be comparatively useless, there being nothing so penetrating as the steam whistle.

There are so many steamers now crossing the Atlantic, going out and coming back *by the same track*, that the danger of collisions is much increased, though still very small indeed. To avoid this particular danger in some degree, I suggest that a rule be adopted for outward steamers habitually to keep a little more to the north or to the south than homeward-bound steamers after passing Cape Race. If a rule should be established to this effect by the regular lines, the chances of collision would be still smaller, and the sailing ship, knowing her latitude, would generally be aware, when she heard the steamer's paddles or her whistle in a fog, which way she was heading, not only by the number of blasts, but by the position or place of the ship; a few minutes or hours in the length of the passage would be of no consequence in comparison with the confidence which would be the result of these or similar precautions.

A port fire or blue light burned at stated periods in thick weather, finds some advocates, but it has serious disadvantages; it cannot be seen far in a fog, and it cannot denote the course of the ship, while it blinds the men on the lookout on board of the ship, and it would cost more than a little waste of steam. The steam whistle, then, I consider the true thing to warn an approaching ship; but after all, the sound of a large steamer's paddles, when going rapidly, is the best warning to sailing ships and propellers, though this noise is not usually heard far from another paddle-wheel steamer, nor by sailing vessels, except in moderate weather.

One great cause of the loss of life on the occasion of the loss of the steamer Atlantic on Lake Erie, and in the case of the Arctic, was, no doubt, the prevailing idea that sinking ships go down suddenly, creating a whirlpool, or vortex. A sinking ship is, thank Heaven, not a usual sight, but it is not altogether a novelty with me, for I have been on board of one that capsized and sunk in a few minutes; and I have seen another sink under the bows of the Europa, and I am not a believer in jumping into real danger, in order to avoid an imaginary one! Ships go down more or less suddenly, no doubt, and there is in some cases a tendency to draw down to a certain extent all those who may be on the deck, but not to an extent greater than would be the case by jumping from the ship's rail, in which process any ordinary "life-preserver" is likely to be damaged by breaking its fastenings.

I ought to have alluded to the common objection to most "life-preservers," namely, that they are apt to be out of order, that they are made of perishable materials, and cannot be trusted. These objections apply with equal force to most of the ship's fittings; the sails rot in the gasket, and the ropes become weakened by exposure to the weather, and they often fail when most needed; the rudder pintles sometimes give out, and the masts and steering gear often fail: yet we cannot dispense with sails and ropes, and with masts, and rudder, and steering gear, for the reason that they are subject to accidents.

Life-preservers and boats, float and steam whistles, are subject to derangements, and cannot be expected to take care of themselves.

This is a good occasion to illustrate the value of a good look-out from aloft several times a day, on board of all vessels at sea. There is no knowing how many despairing souls might have been saved, as was Captain Luce, by a good look-out from aloft, if every shipmaster should send a man aloft several times a day, to look for wrecks, particularly in the stormy Atlantic.

I have now treated of the means generally and obviously useful for saving life in cases of sudden wreck, and I come now to make some suggestions as to more extensive means for this great end in steamships. All steamers, whether of wood or of iron, should have a practically water-tight bulkhead before the engine-room and another abaft the same, so that any serious fracture at either end would enable the engines still to work and keep the small leaks under;—true, the bulkhead cannot be always perfectly tight, but we must not give them up for this reason, any more than we should give up ships because they sometimes leak!

The saloon deck of steamers, generally sixty or eighty feet long, may be so built and fastened to the standing part or sides as to be detached at short notice, and form a valuable raft, especially if spars, pontoons, and life-lines and railings are so prepared as to meet the exigency. A short time ago the idea of constructing a steamer so as to sink with comparative saftey to her passengers, would have been met with ridicule; but we now realize from the sad experience of the Arctic, that good ships can sink, and that many lives can be lost, by sudden accidents for want of precautions in their *original construction*. Besides the saloon deck and the bulkheads, it would be a good plan in constructing sea steamers to have all hatches, doors in bulkheads, and other apertures, so contrived that they can be closely fastened; firstly, to exclude air in cases of fire, and next to keep in the air when the ship is by an accident like that of the Arctic, gradually sinking. I do not hesitate to say that had the engines of the Arctic been stopped as soon as the probability of sinking was imminent, and all the ports, dead-lights and hatches securely calked and fastened down, the ship would have filled much less rapidly; it is not necessary that the apertures should be entirely air-tight, nor that the bulkheads should be perfectly water-tight in order to *stop the vent*. As fire on board ship is not uncommon, we all resort in such a case to *excluding the air*, and I see no valid reason why we should not *keep the air in* when the leaks get the better of the pumps. I have another suggestion to make in regard to the machinery of steamers.

I assume that the boilers of the Arctic contained each 3,900 cubic feet which at 35 cubic feet of sea water to a ton, gives 111 tons, from which deducting 40 tons for water in the tubes and furnaces, (supposing the ship to be so far full of water,) leaves 71 tons of buoyancy, or floating power; and there being four boilers, it follows that the floating power of the boilers is 284 tons. But the boilers being three-quarters full of water, this buoyancy was of no great use in sustaining the sinking ship. How could

this water have been excluded from the boilers, supposing the water in the ship to have been about six feet above the bottom of the boilers, and the water-line in the boilers four feet higher, or ten feet above the bottom of the boilers? By stopping the engines soon after the accident, arresting the escape of steam and opening all the blow-off cocks, the steam in the boilers could have been made subservient in ejecting the water from them: but as soon as the internal level of the hot water had got to be a little below the level of the cold water in the ship's hold, the steam remaining would have rapidly condensed, and a complete vacuum would have been formed in the boilers: now, unless the blow-off cocks had been shut at this moment, the water would, of course, rush in and re-fill them to their *entire capacity*. But if the cocks had been shut at the proper time, the water in the boilers might have been reduced from 10 to 6 feet, making a gain of say seventy tons in the four boilers; but the space in them not occupied by water, being a perfect vacuum, the pressure of the atmosphere might have *collapsed* them.

If, on the other hand, the engines had been stopped when the water in the ship reached the bottom of the boilers, and the fires been drawn, the internal pressure might have been used to eject every drop of the water; and in that case, *if an air-pipe could have been used to let in the air from the deck, or the engine-room*, and so fill the boilers with air, the moment that the water in the hold had got high enough to cause the remaining steam to condense, and the aforesaid vacuum to approach, why the consequence must follow (the blow-off cocks being closed at the right time) that the full floating power of the empty boilers, about 284 tons, would be exerted to make the ship sink slower, or perhaps float indefinitely deeply immersed, particularly with all the apertures on the main and lower decks closed. In order to use this power in future steamships, it will only be necessary to have the means to close the blow-off cocks from the deck, and have an air-pipe to each boiler to be opened at pleasure.

I would remark in this connection that this general idea occurred to me, a novice in steam, at the time I first heard of the Arctic's accident: but not having confidence in my own knowledge of the subject, I consulted an eminent engineer, and now give the result nearly in his own words. It will no doubt be argued that in a time of great danger in a sinking ship, the problem would not be solved with accuracy and good judgment; this is quite likely, but it does not afford a good argument for not providing the means to be on the safe side. I contend that if all the means of saving life and saving the ship that I suggest be adopted, the chances of confusion and panic will be much lessened.

I come now to speak of the mistakes made in the management of the Arctic at the time of the accident, or so soon thereafter as it became morally certain that the ship must sink.

In making these remarks, I would not be understood as implying blame to the gallant commander; from a personal knowledge of him, I am quite sure that he thought only of the safety of his passengers, I would frankly say that it is much easier, while sitting by our firesides, and after the disaster, to suggest what ought to have been done. It was a fatal mistake to run the ship when it was ascertained that the leak was rapidly gaining on the pumps. The land was forty or fifty miles distant, and every revolution of the wheels not only increased the leak, but carried the ship further from the direct track of vessels. The ship should have been arrested in her course, and all the means applied to getting the boats safely manned, all the apertures should have been carefully closed, and the masts should have been cut away, as they would have done more towards forming rafts than

all the spare spars. In all the accounts that I have seen, not one word is said as to any attempt to cut away the masts; perhaps no axes were at hand; and if this is true, it shows a lamentable want of precaution for any emergency liable to happen to any ship. Allowing that the officers and most of the crew had already accidentally or wilfully left the ship, it can hardly be possible that there were no passengers who could handle an axe, and the only way that I can account for the omission of this expedient is by supposing that the axes had been taken away, or that the ship was not provided with them. But the great cause of the immense loss of life was the want of due organization for such an emergency, and this cause operated to a fearful extent in consequence of the want of sufficient boats to take anything like the whole number of persons comprising the crew and passengers of the ship. If the Arctic had no more boats than the Atlantic or the Baltic, in which latter ship I once made a passage, not more than about two hundred souls could have been put into the boats with any chance of safety, even in smooth water; the boats of the Collins line are inferior in size to those of the Cunard steamers, and there are not enough of them for so large a complement as was on board the Arctic at the time of the collision.

The running away from the boat of the first officer, although dictated by the best motives, was a fatal error, for the ship not only lost one of the best boats, but she also lost the valuable services of one of her most effective officers, and of several of her crew. Capt. Luce abundantly exhibited his seamanlike and disinterested conduct by lowering this boat to assist, as he supposed, the sinking propeller.

Great allowances must be made for Capt. Luce when we cast any imputation on his want of judgment in running the ship after he was sure that nothing could save her. Who is there with such a vast accumulation of responsibility on his mind and heart, that would have done more than he? Surrounded as he was by despairing friends, looking to him for superhuman exertions, practically deserted by his men and by most of those to whom they had been accustomed to look up to for orders and control, what more could he do than to use his voice, and by his manly example show that if he had been properly supported, many might have been saved? As to the desertion of the firemen and seamen, little more need be said than that they obeyed the instinct of self-preservation. They are not usually men from whom you would expect a different course. With few exceptions, they were men without any particular attachment to the ship, or to her officers or passengers. If they had been duly organized for such a fearful crisis, and if they had felt that the boats would contain every soul on board, there would have been put on the record of humanity many acts of disinterestedness and devotion to duty. But without discipline, *preconcerted and duly enforced discipline*, what else could have been expected of them than to rush for the boats? The few who did not do this deserve to be enrolled among the heroes; but I doubt not there were among the deserters many men who, under proper control, would have equally deserved the name!

Captain Luce is not altogether responsible for this want of order; nay, he is less so than the law-makers, the public, through their representatives at Washington. Captains and mates of ships have so little support in the law that they are content if they can get from port to port by being blind and deaf to the want of subordination of seamen and firemen. As to the latter class, the captain and officers scarcely know them by name; they are generally under the orders, not to say control of the engineers, and the engineers and their assistants are not sufficiently under the control of the captain, and usually pride themselves on being almost independent of his or-

ders, excepting as to the getting up steam, going ahead, or backing astern of the ship. The chief engineer in American ships, so far as I can judge by a short experience in the latter, is not put on a footing of confidence as in British steamers, particularly those on the East India route. This is all wrong; the chief engineer should be in all respects considered as the person to whom the captain is to look in dangerous times. If this sort of confidence generally existed, the engineer's subordinates in the engine-room would be more likely to do their duty faithfully, in the event of a great disaster. Firemen, seamen, servants, cooks and waiters, in short, *every man in the ship*, should have something to do, some place to go to, out of the common course, in case of an alarm. In this way the panic so natural in time of danger would be much less, and the chances of safety to all concerned would be vastly augmented.

I understand from one of the survivors of the Arctic's officers, that she had a good set of seamen on high wages, and that they were generally sober men; men to be relied upon in time of danger from the ordinary perils of the sea. I can, if this be true, only attribute their anxiety to leave the ship, to a want of confidence in the means provided for saving them. True, the law says that the seamen must stick by the ship and assist the passengers, and after seeing them safely deposited in the boats, they may sink or swim at their leisure, if there be no means to buoy them up—but what seaman, who has not served in a ship of war, under strict orders, and having a certain amount of "*esprit du corps*," can be expected to study the niceties of Blackstone or Story, on board a sinking ship?

I *pity* the man who lost so good an opportunity of distinguishing himself, but I can scarcely *blame* him. Life in a coal-stained skin and a red shirt is as dear as if clad in broadcloth and velvet.

Finally, the ceiling and timbers in the wake of a steamship's engine-room should be closely fitted and made water-tight between the bulkheads. In this case a leak in the fore-hold, or after-hold, or in any place forward or abaft the bulkheads, would be kept from flooding the engine-room; and the pumps, even those attached to the engine, could be worked much more effectively than when in danger of being flooded. These remarks are not made in a fault-finding or captious spirit, nor are they made by one who considers his opinions eminently orthodox; but they are submitted by one who thinks that if all who may be no more orthodox than he on marine matters, should express their views with equal candor, some desirable hints might be gathered tending to mitigate the sorrows of the sea. For Captain Luce I have a personal regard which cannot be impaired by much greater mistakes than I have attributed to his overburdened spirit; and I may safely say that among the many emotions to which a life of some peril by sea and experience by land has necessarily subjected me, none ever came to my heart more strongly or gratefully than the simple words on a bulletin board, which I read while riding through the streets of New-York, a few days since—

"*Captain Luce Saved.*"

If life, under the circumstances of his great trial, is worth having, he certainly ought to have it. No man more richly deserves the *quiet* sympathy of his friends. His first thought on finding himself afloat, must have been—

"Would to God I had died for thee."

[*Boston Journal.*

NOTICE TO MARINERS.

LIGHT ON CIES ISLAND, COAST OF PORTUGAL.—The new Light-house erected on the summit of Mount Faro, that being the most prominent point on the extreme south of the centre Island, will be lit every night from sunset to sunrise, commencing with that of the 19th of November.

The Light-house is situate in lat. 42° 12′ 23″ N., lon. 2° 41′ 50″ W., on the meridian of the Observatory of St. Ferdinand. Its apparatus is of the second order, catadioptrical, with eclipses from minute to minute. The light is raised 650 Burgos feet above the level of the sea; it produces a tangent of 31 miles, but it can be seen at more or less distance, according to the state of the atmosphere and the height of the observer.

CAPT. NORDEN, of the brig Loretto, arrived at Philadelphia 10th inst. from Satilla River, Geo., recommends masters of vessels bound to either Doboy or St. Andrew's sounds, to place no dependence upon receiving pilots outside the respective bars, unless in light and moderate weather, several disasters having lately occurred on that account.

THE CORAL REEFS AND SAND BANKS IN TORRES STRAITS.—HYDROGRAPHIC OFFICE, ADMIRALTY, Oct. 21st, 1854.—Sir, I have to acknowledge the receipt of your letter of the 18th inst., communicating a notice of two banks on the coast of Australia, said not to be laid down in the Charts.

The coral patches in Torres Straits, if the bearing of Hardy's Island be correct, is most probably one of the northern of the five coral patches named "Ashmor's Banks," shown in the Admiralty Chart, No. 1077, surveyed by the late Captain Blackwell, R. N.

The sand bank and reef 11 miles long, reported in lat. 15° 50′ S., lon. 149° 10′ E., in the Coral Sea, occupies the position nearly of Willis' Islands, in the Admiralty Chart of Australia; but as no mention of these Islands is made, it may be presumed they were not in sight.

Should any other merchant vessels pass that way, it will be very desirable to obtain further information respecting it, and a somewhat similar reef in 16° 29′ S., 142° 5′ E, reported in your letter of the 3d inst.

JOHN WASHINGTON,
For the Hydrographer.

CAPT. G. A. HALSTED, R. N., Sec. Lloyd's.

LONDON, October 28, 1854.—The new lightship on the Cooperground, near Lasso, will exhibit its light on Wednesday evening, Nov. 1st, half an hour after sunset, unless prevented by unavoidable circumstances.

DISCOVERY OF A SUNKEN ROCK NEAR SODERARM'S LIGHTHOUSE.—Extract from the log-book of the ship Robert Dickson, on a voyage from Swartwik to London, Oct., 1854.

Sunday, October 8, 1854.

"Wind N. W., fresh breeze, and clear at 8 A. M., Soderarm's lighthouse bearing N. W. one half W. by the compass. At about 8.30 A. M. the ship struck upon a blind rock three times, but did not stop, though she struck so heavy that part of her false keel floated up in her headwater. A few minutes after Soderarm's lighthouse bore N. 40° W. and Swenska Bjorn S. 52° W. by compass. No leakage could be observed.

"In the chart published by Gustaf Von Flint, in 1849, there is no shoal marked down on the spot, but there is one about an English mile and a half nearer the Swenska Bjorn. The ship was drawing at the time about 18 feet water, so there is reason to believe that the water over the shoal is the same depth as the ship struck when between the waves.

"The rock seemed to be very small, possibly not larger than the bottom of a long boat."

Descriptive List of Buoys as they are passed by vessels entering the channel at Barnegat Inlet.—By order of the Light-house Board.

PHILADELPHIA, *Oct. 12th*, 1854.

SEA BUOY STATION.—Black and white, No. 1, Can Buoy, Barnegat Light-house, N W., depth at low water of spring tides 25 feet. Vessels, after making the Sea Buoy, will steer N. W. by N., from the Sea Buoy to No. 2, the Bar Buoy, distance quarter of a mile.

BAR BUOY STATION—Black and white, No. 2, Spar Buoy, Lighthouse W., depth at low water of spring tides 9 feet. From No. 2, steer N. by W. for No. 3., distance quarter of a mile.

CHANNEL BUOY STATION—Black and white, No. 3, Spar Buoy, Light-house W. by S., depth at low water of spring tides 12 feet. From this Buoy, steer N. N. W. for the point of North Beach; and when about 53 yards from this point, steer N. W. by W. ½ W. for No. 4, leaving it on the port hand.

CHANNEL BUOY STATION—Black, No. 4, Spar Buoy, Light-house S. W. by S., depth at low water of spring tides 4 feet. From this Buoy, steer W. by N. ¼ of a mile, thence S. W. by W. ½ a mile, thence S. W. for Buoy No. 5.

Strangers had better anchor below No. 5, as the anchoring ground is good, they might find it difficult to cross the Bulkhead, if not acquainted above No. 5.

BULKHEAD BUOY STATION—Black and white, No. 5, Spar Buoy, Light-house S. E., depth at low water of spring tides 8 feet. From this Buoy, steer S. ½ E. for No. 6, which must be left on the starboard hand.

SOUTH BULKHEAD BUOY STATION—Red, No. 6, Spar Buoy, Light-house E. by S., depth at low water of spring tides 7 feet. After passing this Buoy, vessels are in good anchorage ground all the way up to the westward to the point of the Beach.

In coming from the seaward, Red Buoys are left on the starboard hand, Black Buoys on the port hand.

Black and white Buoys are in mid-channel.

VESSELS NAVIGATING LONG ISLAND SOUND, should keep a good lookout for two sunken wrecks near Norwalk, in the direct track up and down.

REPORT OF THE U. S. COAST SURVEY OF A RECONNOISSANCE OF WIMBLE SHOALS, COAST OF NORTH CAROLINA.—Coast Survey Station, near Camden, Me., September 22, 1854.—Sir:—A hydrographic survey of Wimble Shoals, on the coast of North Carolina, included in the instructions to Lieut. Com'g T. A. Craven, U. S. N., assistant in the Coast Survey, has been executed in part by that officer, and reported upon under date September 18th.

"The Wimble Shoals consist of three ridges parallel to the coast of North Carolina, lying E. S. E. from the Northern part of the woodlands on Chicomicomico, and distant from two to four statute miles from the beacon; the soundings are very irregular, changing sometimes 2½ fathoms in a cast of the lead, with coarse sand, gravel and shells on the shoals, and outside in 13 fathoms, soft black mud. I have not in this season struck the shoalest water, as in September, 1852, crossing in the "Corwin," we had one cast of three fathoms, with five and seven fathoms before and after it.

"Vessels of considerable draught should not approach the land here within four miles; there is generally a strong current setting towards the shore, and the water shoals very suddenly.

"I have already stated to you the circumstances which made it impossible to continue the work, but so far as it goes, it is reliable, and may serve the present interests of navigation on the coast."

(Signed) A. D. BACHE,
Superintendent.

HON. JAMES GUTHRIE, Sec. of the Treasury.

CAPT. GARDNER, of the U. S. schr. George Seers, reports having discovered on the 19th inst., Gay Head Light bearing S. by W. ½ W., distance 2½ miles, in 13

fathoms of water, the head of a large mast with the end of a lower yard about 6 feet out of water. The mast appears to be held for the rigging of some sunken vessel.

A Light Vessel, schooner rigged, showing two lights, one at each masthead, (one of the lanterns with six reflectors,) masts and hull painted yellow, will be anchored near the Sow and Pigs Ledge, on or about the 26th inst., to take the place of the old boat, requiring repairs.

Notice of a Harbor of Refuge, near Carysfort Reef, Florida.—"An excellent harbor was discovered, four and a half miles to the northward and westward of Carysfort Light-house, so easy of access that it may become an important harbor of refuge, if properly marked by a beacon and buoys. The depth of water at the entrance to the channel is twenty-six feet, and the light-house, from its proximity, assists in guiding to the anchorage, which is soft clay, and known only to a few pers s. It is proposed to call this Turtle Harbor, as near to the reef of that name."

Ship Flying Cloud, at this port from Canton and Hong Kong, reports: 7th April, ran upon a sunken rock in the China Sea, so as to bring her load-line forward three or four feet out of the water, where she hung, thumping heavily for fifteen or twenty minutes, causing her to leak badly; judged the rock not to exceed thirty or thirty-five feet in diameter, with from six to twelve feet water upon it, and of a dark-brown color; 8th, 30 minutes P. M., saw Calivie Mountain, on Mindora, bearing east, distant by estimate 50 miles; assuming this to be correct, it placed the ship in lat. 13° 28′ N., lon. 119° 34′ E., and indicated a current setting north 80° 2′, fifty-two miles in two days, instead of north 57° 2′, twenty-eight miles in the same time, as indicated by the observations of the 4th and 5th; taking this current, in dicated by seeing the land, to have been running in the same direction, and with the same velocity, from the 5th to 6th at noon, it would place the ship in lat. 12° 16′ N., lon. 120° 18′ E., which is twenty-two miles to the S. and three miles to the E. of a sunken rock, with nine feet water on it, as laid down in Raper's Maritime Positions, lat. 12° 38′ N., lon. 120° 15′ E., though the latitude does not agree by twenty miles. It is supposed that it must be the same upon which the F. C. struck, and that there is a more northerly current, (which is verified by her swinging so as to head steady to S. W.,) than subsequent operations would seem to warrant. It is represented on Hosourgh's charts, issue of 1845, as a shoal called "Hunter," and in such a manner as to lead one to suppose it a shoal of four miles in extent, and that there would be no danger in approaching it in the day-time, as white-colored water would be seen in time to avoid it.

Capt. Coxetter, U. S. M. steamer Carolina, reports the following:—From 20 to 30 miles south of Tybee light, in 8½ feet of water, lie two sunken vessels, bearing about S. S. W. and N. N. W. from each other, and nine miles apart: one appears to be a schooner, with one mast out of water, about four or five feet of the masthead broke off, and the other a large vessel, with end of bowsprit out of water. Both vessels probably lost in the gale of September last; as they are immediately in the track of vessels bound to Florida and the southern coast of Georgia.

The Light Ship at Galveston has resumed her regular station inside of the bar.

The Nun and Can Buoys marking the channels across the Bar, and towards the City of New-York, will be removed, and spar buoys put in their places for the winter.

Light-house at Boone Island, Maine.—A new light-house tower having been built on Boone Island, near the old light-house, and fitted with a second order catadioptric illuminating apparatus on the system of Fresnel, the new light will be exhibited for the first time on the evening of the 1st January, 1855, and every day thereafter, from sunset to sunrise, from which date the light from the old tower will be discontinued. The tower is built of gray granite, 118 feet high; and the local plane of the light is 133 feet above the level of the sea. This light should be

seen in ordinary states of the atmosphere, from the deck of a vessel 15 feet above the water, at a distance of about 17¼ nautical or 19 statute miles. The keepers' dwellings are situated west of the tower, and are of the same color, (gray.)

The following are bearings and distances from Boone Island Light-house to prominent objects in the vicinity, viz:—To Boone Island Ledge, east, distant 3 miles; to beacon on York Ledge, W. by S., distant 5½ miles; to Isle of Shoals Light-house, S. by W. ½ W, distant 15 miles; to Whalesback Light-house, S. W., distant 13 miles. The bearings are magnetic.

The approximate position of this light is—lat. 43° 98′ N., lon. 70° 29′ W. of Greenwich.

Light at Sapelo Island, Geo.—On the 20th of December next, a fixed light, varied by flashes, of the fourth order of Fresnel, will be substituted for the present revolving illuminating apparatus, at Sapelo Island, Geo. The elevation of the light is 74 feet above the level of the sea, and should be seen under ordinary states of the atmosphere from the deck of a vessel fifteen feet above the water, 14 nautical miles.

The approximate position of the light is—Lat. 31° 21′ 30″ N., lon. 84° 24′ W. of Greenwich.

Light at St. Augustine, Flor.—A fixed light, varied by flashes, of the fourth order of Fresnel, will be substituted on the evening of the 31st of December next, for the present fixed illuminating apparatus at St. Augustine. The elevation of the light is 68 feet above the level of the sea, and should be seen, under ordinary states of the atmosphere, from the deck of a vessel 15 feet above the water, 14 nautical miles.

The approximate position of the light is—Lat. 29° 52′ 16″ N., lon. 81° 25′ W. of Greenwich.

Portsmouth—Light on Southsea Castle.—Hydrographic Office, Admiralty, Nov. 3d, 1854.—Notice is hereby given, that the light on Southsea Castle, having been raised 20 feet, will on the 7th inst., and thenceforth, be displayed at an elevation of 51 feet above the level of high water.

It will show a green light to the Westward, and a red light to the Eastward, as before, no alteration in these particulars having been made; the bearing of the line of division between them being about N. E. by N., and S. W. by S., or in the direction nearly of the Spit Buoy.

Caution when Approaching the New Mole Head at Gibraltar—Danger Buoy.—Hydrographic Office, Admiralty, Nov. 4th, 1854.—Notice is hereby given, that the new mole head at Gibraltar is in progress of extension to the northward, and that a red beacon buoy has been laid down about a cable's length off the Mole Head, in order to mark the limits of the advancing work under water.

It will, therefore, be highly dangerous for any vessel to pass between that Buoy and the Mole Head.

Baltic, Little Belt—Harbor Light of Assens.—Hydrographic Office, Admiralty, Oct. 18, 1854.—The Danish Government has given notice that the new Harbor Fixed Light at Assens, on the Island of Feyen, in the Little Belt, was exhibited on the 1st of October last.

The light tower is painted white, and stands on the Northern Mole, at 47 feet from its outer end

The light is a fixed bright light, at an elevation of 20 feet above the level of the sea, and is visible at eight miles distance.

A GENERAL CHART OF COAST FROM GAY HEAD TO CAPE HENLOPEN.

TO SHIP-MASTERS.

The attention of the Board of Underwriters has recently been called to a most valuable General Chart of the Coast from Gay Head to Cape Henlopen, from a Survey under the direction of E. R. Hassler and A. D. Bache, Superintendents of the Survey of the Coast of the United States, published in 1852.

It is the judgment of the Board that this Chart should be in the possession of every Ship-Master trading to and from the port of New-York, and it is confidently believed that if its directions are carefully observed, and the lead and line properly used by competent hands, no vessels would be stranded on the shores of Long Island or New-Jersey, unless driven by a hurricane.

It is earnestly hoped that every navigator who regards, not merely the safety of property, but his own reputation and the interests of humanity, will avail himself of the means by which shipwreck and disaster on our coast may be avoided, except in those *very rare cases* in which human skill and vigilance are overruled by the elements.

The Board deem it proper to publish herewith the following extracts from the Sailing Directions which accompany the Chart above referred to.

Ellwood Walter,
Secretary Board of Underwriters.

De ember 9th, 1854.

SAILING DIRECTIONS FOR VESSELS FROM SEA.

GENERAL DIRECTIONS.

The Gulf Stream, by its temperature, gives the first warning of an approach to the coast. In latitude $38\frac{1}{2}°$, it is nearly 360 nautical miles from the land, measuring on a parallel of latitude. After passing through it, the temperature begins to fall. There is also a fall of temperature on striking soundings, which shows the time to use the deep-sea lead.

The color of the water changes with the depth. From 150 to 50 fathoms, it changes from dark blue to light blue, and from 50 to 30 fathoms and less, from a light blue to a light green.

Seven curve lines are drawn on the map,. showing the depths of 10, 15, 20, 30, 40, 80, and 100 fathoms. Up to the 20 fathoms curve, they follow the general form of the shore; and between the 80 and 100 fathoms curve, the water suddenly deepens. The 20 fathom curve is 31 miles from Cape May in an E. by S. direction, but less than seven miles from Montauk Point. A depth of 20 fathoms off the eas tend of Long Island is therefore too near the land, unless with a commanding wind, while 20 fathoms off Cape May is at a safe distance from the shore.

The latitude of a ship's place is usually better known than the longitude, but the latter is the most important on approaching this coast, and can be determined approximately from the latitude in connection with the distance between the curve of depth.

To show the slope of the bottom and the sudden change in the depth on approaching soundings, sections of the bottom along five lines, which are drawn on the map, are added. The rise of the outer bank slope is so steep, hat, if uncertain of position, from want of observations, the careful use f the lead will preserve from danger.

BOTTOM.

In 100 fathoms, East of the entrance of Delaware Bay, the bottom, in 100 fathoms, is mostly dark gray sand, mixed with broken shells. To the North of this parallel, it is mostly green and blue mud, mixed with sand.

In less than 100 fathoms, East of Delaware Bay, the bottom between 100 and 40 fathoms is most frequently sand and broken shells—inside of 40 fathoms, gray or yellow sand, with black specks. North of this parallel, the bottom is as often mud as sand, the mud being more frequent going to the North-East, until off Block Island, where the bottom from 100 to 20 fathoms is mostly green mud or ooze, known as the Block Island soundings. Green mud or ooze cannot be found within 15 miles of Block Island, and seldom to the West of the meridian of Montauk Point, in less than 30 fathoms water.

Between 40 and 20 fathoms off the coast of Long Island and New-Jersey, the character of the bottom changes so often between these depths, that constant reference must be made to the descriptions on the Chart.

BOUND TO NEW-YORK.

COURSES.

From the Eastward, striking soundings in more than 35 fathoms, green mud, steer direct for Sandy Hook, making Navesink or the Light Boat. Striking soundings in less than 30 fathoms, green mud, steer to the Northward of West, shoaling the water very gradually on that course. If beating against a Westerly wind in the night or thick weather, *do not stand into less than* 18 *fathoms on the Northwardly tack till nearly up with Fire Island Inlet.* The Chart shows that after passing inside of 25 fathoms, the soundings decrease very slowly going West, and very rapidly going North, or on Long Island shore. *This distinction should be carefully borne in mind.*

NOTE.—If vessels from the East bound to New-York fall in sight of Sankaty Light, they are too near to Davis's South Shoal, and will keep to the Southward till they pass it.

From the Southward and Eastward, shape the course from the Navesink Lights, observing the precautions with the lead given in the general directions.

From the Southward, bound to New-York from the Southward, nothing is gained by running into less than 15 fathoms water. *To the North of Barnegat, less than* 15 *fathoms is unsafe,* 10 *or* 12 *fathoms being found within a mile and a quarter of the beach.* If in 15 fathoms in the night or thick weather, THE LEAD SHOULD BE KEPT IN HAND, and the bottom examined. *Gravelly bottom indicates too near an approach to land.*

To run for New-York harbor from the Light Boat, when up with the Light Boat, if without a pilot, steer N. W. by W. ½ W., and after shoaling the water to 8 fathoms, take up the range for the channel to be entered according to the directions on the chart of New-York Bay and Harbor.

BOTTOM NEAR THE COAST.

From Sandy Hook towards the South, the bottom changes from fine sand to coarse gray sand. On approaching Barnegat, it becomes gravelly; and at the mouth of that inlet, it is gravel pebbles, and in some places shells. The soundings also change from 10 to 7 fathoms, at the same distance from

the shore. After passing Barnegat, the bottom changes from gravel to yellow and gray sand, with yellow specks, found off Old Inlet, Little Egg Harbor. Off Great Egg Harbor, the bottom, in from 8 to 10 fathoms is fine gray sand; to the South of this yellow sand is again met, and carried up to Hereford Inlet. South of this inlet, and abreast of Cape May, the bottom is white or gray sand.

DANGERS.

On the lee shore, to the westward of Fire Island Inlet, the shoal ground, forming the bars of the inlet, extends from one-half to one and one-half miles from the shore.

On the Jersey shore there are shoals off Barnegat, and Inlets to the South of it, extending from 1 to 1½ miles from the shore. THEY ARE TO BE AVOIDED BY USING THE LEAD.

DISASTERS AT SEA.

(*Continued from page* 197.)

SHIPS.

Lady Arabella, Mobile, for Marseilles, put into Norfolk in distress, leaking.
Kate Howe, at Boston, from Cadiz, shifted cargo, split sails, &c., had two heavy gales.
Conqueror, at New-York, from Liverpool, lost two entire suits of sails, shipped destructive seas.
Brother Jonathan, Liverpool, for Charleston, wrecked on the British coast, 29th Oct.
Break-o'-Day, Boston for Mobile, was on beam ends 12 hours, lost two men overboard.
Ellis, Mobile for Marseilles, was waterlogged and abandoned in the Mediterranean.
North America, Liverpool for Boston, Nov. 11, lat. 51 10, lon. 16 20, lost many spars in a gale.
Kentucky, at Bird's Island, lost false keel and ran to sea disabled and leaking.
Sagadahock, New-York for New-Orleans, Oct. 21, totally lost, near Pierce's Island, Bahamas.
Avrura, Shields, for New-York, Oct. 16, lost bulwarks, &c.
Flying Cloud, from Canton to New-York, ran upon a sunken rock in the China Sea, lat. 13 28 N lon. 110 34 E., got off, and arrived safely at New-York—see notices to mariners in present number.
Rubicon, from Boston, for Rio Janeiro, put back in distress, had been on fire in lower hold.
Salem, from Bombay, at Liverpool, lost bowsprit, beams, and was damaged, by contact whaleship Dove.
Midnight, off Cape Horn, lost head, sprung bowsprit, in eight days' gales.
Superb, with Guano, sprung aleak off Cape Horn, put back to Valparaiso, crew exhausted.
Calcutta, at New-Orleans, in lat. 31, lon. 44, lying to, lost main-top-gallant mast, main-top-sail, and other sails, shifted cargo, and sprung rudder.
Liverpool, of New-York, draws too much water to get up river into London Docks, lightering.
Unknown, 700 tons, dismasted, waterlogged and abandoned, lat. 45 31 N., lon. 61 07 W.
Unknown, about 450 tons, was passed June 19, (N. lat. 32 40, lon. W. 43 38) bottom up.
Marcellus, Boston for Calcutta, previous to Oct. 4, got ashore at Hoogley River, (Calcutta.)
Grace Darling, Boston for San Francisco, off Cape Horn, lost spars, and otherwise damaged.
Unknown, seen on fire, and burnt to water's edge, on Nov. 12.
Columbian, at Boston, from New-Castle, shifted cargo, and lost spars, &c.
Stephen Larrabee, at New-York, from Shields, lost sails, &c.
John G. Coster, Newcastle for New-York, lost some sails.
Venice, Calcutta for Philadelphia, put back, Oct. 2, leaking.
Heloise, at Portland, got adrift and received slight damage, and injured a number of vessels.
Spars of an unknown vessel, seen, Dec. 2, near Nauset.
Niagara, New-Orleans for Venice, Oct. 24, abandoned in lat. 29, lon. 68.
James Edward, at San Francisco, from New-York, stove bulwarks, split sails, lost 50 tons coal.
Marcelia, Virginia for Thomaston, put into Portsmouth, lost main-mast, fore-top-mast, &c.
Charles, at New-York, from Hull, sprung head main-mast, lost main-top-gallant yard, stove bulwarks, &c.
Dolphin, Boston for Gottenburg, put into Deal, Nov. 21, lost fore yard and top-sail yard.
Catharine, at Charleston, from New-York, had bad weather and lost sails, &c.
Empire, Matanzas for Boston, lost boat, galley, sails, and deck load.
John Land, Boston for San Francisco, put into Valparaiso, leaking badly.

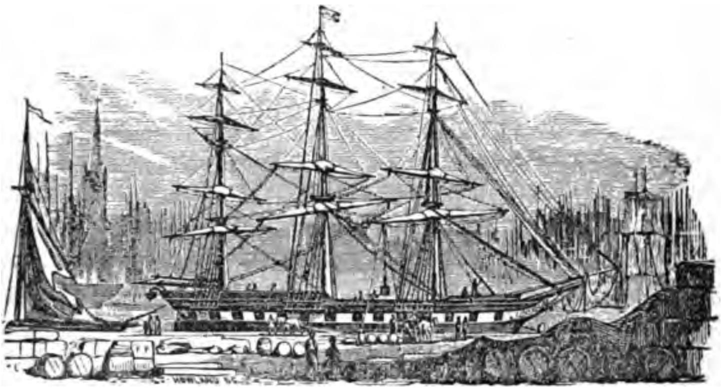
BARQUES.

Unknown, was seen, Oct. 29, lat. 27 30, lon. 63 31, abandoned and full of water; supposed the Neptune.
Unknown vessel seen, Oct. 15, lat. 42 41, lon. 23 04, bottom up.
Spencer, New-York for ——, wrecked on Salt Key, Turk's Island, Oct. 27.
P. R. Hazeltine, London for Philadelphia, Oct. 26 and 27, lat. 45, lon. 46, started head and cut-water.
Sarah Jane, Savannah for New-York, 18 Nov., in collision with schooner, lost bulwarks, stanchions, &c.
Utica, Chicago for Buffalo, struck the breakwater at Buffalo, and sunk.
Childe Harold, Philadelphia for Boston, got ashore at Holmes' Hole, Nov. 15, got off safe.
John Colby, New-York for Aspinwall, Oct. 21, lat. 27 40, lon. 67 20, lost fore and main masts in a hurricane.
Gen. Taylor, Baltimore for Salem, got aground near Holmes' Hole, and off without damage.
Kate Wheeler, at New-York, from Newcastle, shifted cargo and run back, afterwards damaged sails.
Paul Boggs, at New-York, from Newcastle, split sails, stove bulwarks and house on deck, &c.
Chilton, from Saqua to New-York, lat. 32, lon. 79 10, shipped heavy sea, lost bulwark and deck load, leaks.
Anadir, at New-York, from Newcastle, Oct. 27, lat. 44 46, lon. 35 50, lost fore and main top-gallant masts, &c.
Helen A. Warren, in thick fog, got ashore in Cape Porpoise Harbor, not damaged.
Sherwood, at Cardiff, got ashore in the mud, and was got off.
Live Yankee, Philadelphia for San Francisco, off Cape et Roque, lost some spars and sails, &c.
Lewis, for Salem, Aug. 10, got ashore at Zanzibar, afterwards got off, leaking badly.
O. J. Chaffee, Shields for New-York, lost head rails, &c.
John Colby, New-York for Navy Bay, lost spars and ran into Nassau.
Gold Hunter, Matanzas for New-York, lost sails, spars, &c.
Martha Clark, San Juan (Nic.) for Ruatan Island, was wrecked.
Chase, from Bristol, (Eng.) for New-Orleans, 16 Nov., got ashore on Big Gap, at George's Island.
Mopang, Satilla River for Boston, abandoned at sea.
Flight, New-York, at Savannah, Nov. 23, lost sails, &c.
Medora, at Boston, from Havana, Dec. 9, twenty miles from Cape Cod, in contact with a schooner, and lost mizen mast.
Neptune, dismasted and abandoned at sea, seen by Fr. ship Callao, 2d Nov., lat. 28, lon. 68.
Commerce, from City Point, Va., lost main-stay, fore-top-mast cap, &c.

BRIGS.

Unknown, off Cape Henry, 13th Nov. sunk and abandoned.
Catharine Rogers, at Providence, from Jacksonville, lost deck load lumber, and sprung aleak.
Nerues, of Boston, at Marseilles, 22d Oct., lost boats, sails, and stove bulwarks.
Russell, for Salem, from Richmond, ran ashore near Tarpaulin Cove, cargo saved.
E. Drummond, from Trinidad, sprung aleak, and threw over deck load molasses.
Sarah, Genoa for Baltimore, dismasted Sept. 11, abandoned Sept. 17th, lat. 37 10 N., lon. 65 W., crew saved.
W. D. Shurtz, ashore at Cuttlehunk.
Nitheroy, Norfolk for Barbadoes, Nov. 3, lost deck load and masts, was condemned.
Wm. H. Parks, Bangor for Matanzas, Nov. 15, got ashore in Penobscot Bay, leaks badly.
Mahala H. Connery, at Bird Island, for Boston, lost anchors.
Unknown, was seen, Nov. 16, twenty miles S. of Cape Henlopen, waterlogged.
Grand Turk, Havana for Providence, put into Key West in distress, leaks badly.
Tugwassa, Baltimore for Boston, abandoned at sea, vessel sunk after leaving her.
Supposed brig, White Lilly, was passed Nov. 5, lat 43 30, lon. 54, waterlogged and abandoned.
Northampton, of Buffalo, (L. E.) ashore on Thunder Bay Island, (Lake Huron,) total loss, crew saved.
Ellen Patrick, at St. Thomas, from Baltimore, in distress, leaking badly.
Isabel, from New-York, at same port, lost sails and spars, and sprung aleak.
Lucy Ellen, from Rondout, aground on Governor's Island Point, Boston Harbor.
Sarah Parker, Boston, for St Thomas, is supposed to have been lost, not heard of.
Unknown, sunk near Indian River, all hands supposed to be saved.
F. P. Peck, of Charleston, from Picton to Providence, put into Prospect, (N. S.) in distress.
St. Julian, lost at sea, vessel and cargo insured.
Unknown, seen at sea by Barque Truman, waterlogged and abandoned.
Ada, of Boothbay, England, for New-York, put into Fayal, loss of main-mast, fore-mast, head, &c.
Charlotte E. Fay, came in collision with Schr. Orb, lost bowsprit and fore yards, &c.
Gustavus, was ashore, 30 miles below Para, the Steamer Marajo went to assistance.
Unknown, 200 tons, lat. 45 20, lon. 54 40, waterlogged and abandoned, painted ports, herm. rig.
Lion, was in collision, but not damaged.
Amesbury, Mobile for Gardiner, timber, wrecked on Jack Knife Ledge, mate drowned.
Globe, Phil. for St. Jago, in violent gale, lost rudder, put into Turk's Island, saved.
Unknown, (herm.) Dec. 3, got ashore at Black River, Jamaica.
Memnon, (whaler,) at Payta, was injured by fire, and scuttled.
Louis Philippe, Baltimore for Valparaiso, at St. Thomas in distress, and condemned.
Shannon, sailed from Mobile, Aug. 19, for Havre, and has not been heard from; 800 tons.

Commercial and Financial.



SHIP-BUILDING ON THE LAKES.

No I.

BUFFALO AND THE DISTRICT OF BUFFALO CREEK, N. Y.

It was originally our intention, in preparing a series of articles on Ship-building on the Lakes, to have gone back to the earliest period in its history, when the schooner Washington, the first American vessel built on Lake Erie, was launched at Four Mile Creek, near Erie, Pa., in the summer of 1796, and trace up to the present time, through each successive stage of advancement, the rapid progress made in this important art; but we regret that, after several days spent in examining the records kept in the Custom-House at Buffalo, we were unable to obtain any information relative to early ship-building at that port, or in the District of Buffalo Creek. It appears that the Collectors of the several Districts are not obliged to retain in their offices records of all vessels built in their respective Districts; all that the law seems to require is, that where a vessel is built in any one District, if she is to remain in that District, (that is, if her managing owner is a resident thereof,) she is enrolled, and a copy of her enrollment remains in the Collector's office; but when the managing owner resides in another district from where the vessel was built, she is furnished

with a ship-builder's certificate, and a temporary enrollment is given her, with which she can proceed to the port where she is to be enrolled, and no record is kept at the port where she was built of her ever having been constructed there. In this respect we consider the law relative to the enrollment and registration of vessels defective in an important particular.

But little care seems to have been exercised by those having charge of the early official records of the District, to preserve them in a manner that they might be accessible to persons desirous of referring to the early history of the city, and that they might be forthcoming when the historian should require them. Such, however, has not been the case; and not only are the records very incomplete, but several of the first set of books which were kept in the Custom-House have been lost or mislaid, so that they are not to be found. We have therefore been compelled to depend in a great measure on the books of one or two of our oldest ship-builders, in making out the tables which follow.

Most of the officers of the Customs on the Lake frontier are attentive, and are desirous of furnishing all the statistical and general information in their power, and many of the citizens engaged in trade and commerce, and in the transportation and shipment of produce and merchandise, have frequently furnished the public with useful information on the Lake trade and commerce; but it has been difficult to obtain full detailed statements on some of these points, owing to the absence of proper legal requirements and authoritative departmental instruction in that respect.

The American frontier on the Lakes has been divided into seventeen districts. These districts have not been established on geographical position or territorial limits of States, but to suit the convenience of the Custom-House.

The District of Buffalo Creek has a coast line of one hundred miles in extent, commencing at the Falls on the Niagara River, and thence extending southward and westward, embracing the ports of Schlosser, Tonnawanda, and Black Rock on the river; Buffalo, on Buffalo Creek, at the foot of Lake Erie, and Cattaraugus Creek, Silver Creek, Dunkirk, Van Buren Harbor, and Bar-

celona, on the southern shore of Lake Erie, being all the ports between the Falls of Niagara and the eastern State line of Pennsylvania.

Prior to the year 1809, we can find no mention of any vessels having been built in this district. During that year, however, a small Durham boat, of about ten tons burthen, was constructed at Black Rock. The first schooner built in the district, so far as we can learn, was the Experiment, of 29 65-95th tons, at Black Rock, in 1813.

In 1816 three vessels were built at Black Rock—the sloop Hannah, of 48 73-95th tons, the schooner Erie, of 77 47-95th, and the schooner Michigan, of 132 36-95th tons burthen. We do not find that any vessels were built at the Rock in 1817.

The first steamer on the lakes, above the Niagara Falls, was called the Walk-in-the-Water, of 338 69-95th tons burthen; was built by Noah Brown, at Black Rock, in 1818.

In 1822, the first steamer, and so far as we can learn the first vessel, was built at Buffalo. She was called the "Superior," of 346 38-95th tons burthen, and was built by Noah Brown, the same who built the steamer Walk-in-the-Water.

Previous to the year 1821, Buffalo had no harbor, and the smallest class of coasting vessels could not enter and depart from Buffalo Creek without interruption, and the entry of one or two small vessels in a day, excited more interest then than the arrival of a hundred steamers and sail vessels would now. The steamer Walk-in-the-Water, which had then been running nearly three years on Lake Erie, ran from Black Rock to parts on that lake, not even touching at Buffalo.

A harbor company had been formed early in the year 1821, with the view of deepening the channel, and making a harbor which vessels might enter at any time with safety.

This company having finished the pier, and the creek having been carried by a new and straight (although shallow) channel into the lake, a harbor was completed, and measures were immediately taken to establish a ship-yard.

In an old scrap-book, in which are written some of the "Early Incidents of Buffalo," we find the following account of the establishment of the first ship-yard, and how the steamer Superior,

the first vessel launched in Buffalo Creek, came to be built there :—

It was expected that the spring freshet would so widen and deepen the channel as to permit lake vessels, and even the Walk-in-the-Water, (the only steamboat on the lake,) to enter safely. This boat had been built at Black Rock, and run to that place, not even touching at Buffalo, and the very prospect of having a steamboat arrive and depart from Buffalo was highly encouraging. But while anticipating these benefits, the Walk-in-the-Water was driven on shore a short distance from Buffalo, while on her last trip, in 1821, and bilged. The engine, boilers and furniture were saved, and there was no doubt that the Steamboat Company would build a new boat, as they had purchased from Fulton's heirs the right to navigate, by steam, that portion of Lake Erie lying within the State, which right was then deemed valid.

The citizens of Buffalo, without loss of time, addressed the Directors of the Company, presenting the advantages that would accrue to them by building their boat at Buffalo. The Company, immediately on learning their loss, made a contract with Noah Brown & Brothers, of New-York, to build a boat at Buffalo, if it could be constructed as cheaply there as at the Rock, and if there would be a certainty of getting the boat out of the creek.

Brown came on early in January, passing on to Black Rock, without even reporting himself in Buffalo; nor was his arrival known here until he had agreed to build his boat at the Rock, and engaged the ship-carpenters of that place to furnish the timber. The Black Rock contractors, gratified with their success, agreed to accommodate Brown by meeting him at the Mansion House in Buffalo, in the evening, to execute the contract, which was to be drawn by an attorney in Buffalo. The gentlemen, with their securities, were punctual in their attendance.

As soon as it was known in Buffalo that the boat was to be built at the Rock, the citizens assembled in the bar-room of the Mansion House, and after spending a few minutes in giving vent to their indignation, it was resolved to have an immediate interview with Brown, and know why Buffalo had been thus slighted. Perhaps he might be induced to change his mind, if the contract were not already signed. The landlord undertook to ascertain this fact, and reported that it was not yet executed. A delegate to wait on Brown was chosen without any ceremony—there was no time to give specific instructions. "Get the boat built here, and we will be bound by your agreement." The delegate had never seen Brown, and on entering his parlor, had to introduce himself. This done, he proceeded :—

"Mr. Brown, why do you not build your boat at Buffalo, pursuant to the wishes of the Company?"

"Why, sir, I arrived in your village while your people were sleeping,

and being obliged to limit my stay here to one day, I thought to improve the early part of the morning by commencing my inquiries at Black Rock, and consulting the ship-carpenters residing there, who had aided in building the Walk-in-the-Water. While there I was told your harbor was all a humbug, and that if I was to build the boat in Buffalo Creek, she could not be got into the lake in the spring, and perhaps never. Besides, the carpenters refused to deliver the timber in Buffalo. Considering the question of where the boat should be built as settled, I proceeded to contract for timber to be delivered, and shall commence building the boat immediately, at the Rock."

"Mr. Brown, our neighbors have done us great injustice, although they, no doubt, honestly believe what they have said to you about our harbor. Under the circumstances, I feel gratified in making you a proposition, which will enable you to comply with the wishes of the Steamboat Company and do justice to Buffalo, without exposing yourself to loss or blame. The citizens of Buffalo will deliver suitable timber at a quarter less than it will cost you at the Rock, and execute a judgment bond to pay to the Steamboat Company one hundred and fifty dollars for every day's detention of the boat in the creek after the 1st of May."

"I accept the proposition. When will the papers be made out?"

"To-morrow morning. And if you wish it, a satisfactory sum of money shall now be placed in your hands, to be forfeited if the contract and bond are not executed."

"This, sir, I do not require. I shall leave at ten o'clock this evening, and my friend Moulton will prepare the necessary papers and see them executed."

The judgment bond was signed by nearly all the responsible citizens, and the contract for the timber taken by Wm. A. Carpenter, at the reduced price agreed on. To comply with this contract, both as to time and the quality of the timber, required no little energy and good management, but the contractor executed it to the satisfaction of all concerned.

The work of deepening the channel was now proceeded with, but many were the obstacles that the Harbor Company were continually encountering. A heavy bank of ice, resting on the bottom of the lake and rising several feet above its surface, had been formed during the winter, extending from the west end of the pier to the shore. This ice-bank arrested the current of the creek, forming an eddy alongside the pier, into which the sand and gravel removed by the flood were deposited, filling up the channel for the distance of over three hundred feet, and leaving a little more than three feet of water where, before the freshet, there was an average of four and a half feet. This obstruction of the harbor produced not only discouragement, but consternation. Various plans were devised for again clearing out the channel, and at length piles were driven down, and scrapers, formed of oak plank, were set to work, and by the 15th April, much more than

half the work was accomplished, and every doubt as to the practicability of completing it removed.

Although the weather was more favorable for the prosecution of the work during the latter part of April, and the scraping continued with the utmost diligence, yet the first of May came while there was still a few rods of the channel in which only about six and a half feet of water had been gained. As considerable work yet remained to be done on the boat and no loss or inconvenience would accrue to the owners in allowing a few days to deepen the channel, yet no time could be obtained. The boat, having been completed, was now put in motion, and fortunately the pilot, Capt. Miller, having made himself acquainted with what channel there was, ran her out into the lake without difficulty. The boat was however light, and when fully loaded would require much more water. The scraping was therefore continued.

From 1822 to 1845, quite a large number of steamers, propellers and sail vessels were built in this district, but the register kept at the Custom-House, containing the certificates of builders of vessels, could not be found, and we are therefore compelled to pass over that period, and simply give a list of the vessels built in the district during the past ten years, with their names, tonnage, and by whom built.

Buffalo, from the unsurpassed advantages offered by superiority of location, naturally takes the lead of any other lake city in this important branch of industry. Her ship-yards have already sent forth upon the Western waters steamers which must elicit the wonder and admiration of the world.

Steamers, propellers, and every class of sailing vessels, can be built at that port with greater advantage to the owner in the important item of economy, and at the same time equal, if not superior, to all others in quality and model. The timber used in the construction of vessels can be procured as cheap at that port as at any other on the lakes, and the item of iron, which enters largely into the construction of vessels, can be laid down there at a much lower figure than at any other point on the lakes.

Buffalo is also well supplied with machine and boiler shops, furnaces, &c., and machinery can be made as cheap there as elsewhere, and considering the great expense of transportation, and the disadvantages of having the hull and engine built at a distance from each other, perhaps cheaper. Buffalo has four large

ship-yards, with any amount of vacant ground, admirably located on the creek and ship-canal, for ship-building purposes. Connected with one of these yards, there is a dry dock of sufficient capacity to admit a vessel of over 3,000 tons, with marine railway to facilitate the hauling out and repairing of vessels. There is also near the same yard a large derrick, for the handling of large boilers and heavy machinery. These, and other facilities which she possesses, give to her the pre-eminence of a ship-building city, and to these facts may be attributed the reason she has turned out annually the large amount of tonnage noted hereafter—more than double the amount of any other lake city, excepting Cleveland.

This branch of industry has hitherto given constant employment to from twelve to fifteen hundred mechanics, who were enabled to earn good wages throughout the year. This fall, however, owing to the general depression, and the tightness of the money market, there is scarcely any vessel-building going on. Only two schooners, of about 300 tons burthen each, are now on the stocks, and we can hear of no contracts making for the construction of any more. There will doubtless, however, be two or three propellers, perhaps a steamer and a few sailing vessels, commenced during the present winter.

There is at present no demand for vessel stock, and prices of lumber, &c., would be merely nominal.

SHIP-BUILDING ON THE LAKES.

No. 1.—Buffalo, N. Y.

List of Vessels, with their tonnage, and by whom built, from 1845 *to* 1854 *inclusive, at the Port of Buffalo, N. Y.*

1846.

Class.	Name.	Tons.	Builders.
Steamer	Niagara	1,084	l idwell & Banta.
"	Louisiana	778	"
Propeller	St. Joseph	460	"
"	California	420	"
"	Pocahontas	426	Jones.
Schooner	Watts Sherman	199	Bidwell & Banta.
"	Pinta	55	Jones.
"	M. A. Myers	16	"

1847.

Class.	Name.	Tons.	Builders.
Steamer	Baltic	800	Bidweil & Banta.
"	Seneca	72	"
"	Diamond	331	"

Class.	Name.	Tons.	Builders.
Steamer	Belle	240	Bidwell & Banta.
Brig	Wm. Monteath	261	"
"	Missouri	153	"
"	Saginaw	282	Jones.
Schooner	Petrel	208	"
"	Mansfield	213	"
"	H. B. Bishop	265	"
"	M. H. Sibley	252	"
"	Wm. Adair	81	Cameron.
"	Robert Emmett	245	Bidwell & Banta.
"	Suffolk	250	"
"	Excelsior,	242	"
"	Hope	249	"
"	Charter Oak	184	"
"	Green Bay	233	"

1848.

Steamer	Key Stone State	1,354	Bidwell & Banta.
"	Queen City	906	"
Propeller	Delaware	416	"
"	Sandusky	370	Jones.
"	Gen. Taylor	462	"
Brig	Lowell	255	"
"	St. Louis	210	Bidwell & Banta.
Schooner	E. K. Bruce	240	"
"	Henry Hagar	237	Jones.
"	P. P. Pratt	196	Van Slyck.
"	Helen Kent	92	Laurie.

1849.

Steamer	Tom Sims	150	Bidwell & Banta.
"	Charter	197	Jones.
Propeller	M. B. Spaulding	419	"
"	Illinois	530	Bidwell & Banta.
Barge	Liberty	126	Van Slyck.

1850.

Propeller	Henry A. Kent	442	Jones.
"	Ontario	324	"

1851.

Steamer	Lady Elgin	1,037	Bidwell & Banta.
"	Atlas	400	"
"	Fox	102	"
Propeller	Buffalo	689	"
"	Lathrop	55	Van Slyck.
Schooner	B. F. Davidson	154	Bidwell & Banta.

1852.

Steamer	Southern Michigan	1,470	Bidwell & Banta.
"	Northern Indiana	1,475	"
"	Golden Gate	770	"
"	Kaloolah	443	Jones.
"	Iowa	981	"
"	Potent	31	Haggart.
Propeller	Cataract	393	Jones.
"	Mayflower	623	"
"	City of Oswego	357	"

Class.	Name.	Tons.	Builders.
Propeller	Edith	549	Bidwell & Banta.
"	Bay State	372	"
"	Echo	115	"
"	Frederick Follett	37	Wafford.
"	B. F. Bruce	168	Chapman.
"	Eclipse	136	Notter.
"	G. W Tifft	81	Sims.
Schooner	Fox	405	Bidwell & Banta.
"	Robert Willis	367	"
"	Henry L. Lansing	369	"
"	West Wind	255	Jones.
"	Tuscola	221	"
"	May Queen	43	Carpenter.

1853.

Class.	Name.	Tons.	Builders.
Steamer	Crescent City	1,756	Bidwell & Banta.
"	Queen of the West	1,851	"
"	Garden City	657	"
"	St. Lawrence	1,844	Jones.
"	Mississippi	1,827	"
Propeller	Northern Michigan	359	Bidwell & Banta.
"	Jefferson	344	"
"	Portsmouth	525	"
"	Young America	359	"
"	Charter	241	"
"	International	473	"
"	Dayton	366	Weeks.
"	Louisville	366	"
"	Cincinnati	366	"
"	Kentucky	366	"
"	Brunswick	512	"
"	Pilot	77	Chapman.
"	Underwriter	107	Laveyea.
"	P. L. Barton	40	"
"	A. S. Field	115	"
Brig	Young America	346	Jones.
Schooner	North Star	366	"
"	Homer Ramsdell	275	"
"	C. Reeves	279	"
"	Gem	306	Weeks.
"	Arabian	353	Bidwell & Banta.
"	Oriental	270	"
"	Thornton	353	"

1854.

Class.	Name.	Tons.	Builders.
Steamer	Western World	2,002	Jones.
"	Plymouth Rock	1,991	"
Propeller	Toledo	585	"
"	Oriental	950	Bidwell & Banta.
"	Sun	629	"
"	Omar Pacha	343	"
"	Hamilton Morton	144	Collier.
"	Wm. Peck	172	Sims.
Barque	Great West	765	Weeks.
"	Emily J. Roelofson	385	"
Brig	Empire State	396	"
Schooner	Maple Leaf	299	"
"	Geo. M. Chapman	318	"

Class.	Name.	Tons.	Builders.
Schooner	Cairo	355	Weeks.
"	Hurricane	331	"
"	Arab	204	Laveyea.
"	Robert Bruce	312	"
"	Republic	300	Jones.
"	Nautilus	306	"
"	Three Bells	305	"
"	Little Belle	158	"
"	Energy	292	"
"	Richard Mott	296	"
"	Harriet Ross	229	Walsh.

(Concluded in our next.)

SHIP-BUILDING IN 1854.

Editors of the Nautical Magazine:—

Gents.:—Having quite recently passed through the principal ship-building districts of Maine, and gathered some knowledge of what is doing in the Province of New-Brunswick, together with the operations in Massachusetts and New-Hampshire, with which I am intimately conversant, I am led to make a few crude remarks upon this branch of industry. Should you consider them worth notice, give them a place in your valuable work.

It will be readily admitted, that during the present year, all descriptions of materials for the construction, as well as fitting and finishing of new ships, or repairing and re-fitting old ones, have ruled much higher in prices than ever before, since we became a commercial country of any magnitude; and it will be further admitted, by all that great class of ship-owners and builders, both of Europe and America, who are engaged in the race for the carrying trade, and markets of the Old World, that the tonnage of this year is not behind former years, to say the least, in beauty of model; and combining, by the adoption of good dimensions, all the high qualities which may be demanded by a severe but careful observer of great skill and experience in owning and sailing, as well as scientific in analyzing the subject, and by such may be pronounced correct in design, and beautiful in finish; and also of great strength, being constructed from first class materials.

With regard to speed, the very latest passages made by new

ships, just returned from voyages to Australia, China, California, &c., show that there is commendable improvement in this as in other particulars. Added to the cost of construction, this year, is the extra high price of labor, consequent upon the advanced cost of living; so that ships built this season, and now on the stocks, cannot afford to be sold at low figures, to say nothing about profits.

"Well," says the merchant or capitalist, "this is not our business. If this description of property is thrown upon the market, we are bound to purchase at the cheapest rate, and sell at the dearest—there lies the profit in our business." Admit it. What then? Why, simply for the holders of this time-honored and all-important description of property to *hold on*, and make the best defence they can under the circumstances: and prudent men will say, after a little reflection, that the case is not so bad a one after all. A very large part of all the ills of life whatever, arise from an over-heated imagination. Now, what are the facts in the present case? Why, every man whom you meet in steamboat, stage or rail-car, after passing the compliments of the day, says, "Well, ship property is rather dull, just now." "Very much depreciated in value, indeed," responds another. Constant talking and dwelling upon this subject have produced a sort of nervous excitement, and the consequence is, that after a time, the man who is the most interested (and under ordinary circumstances would be perfectly satisfied all would come right in the end) yields to his own fears, and he, too, begins to talk the same story, and so on. Hence the prevailing feverish state of the public mind.

Last year, on the contrary, every man whom you met, having any degree of intelligence upon the subject, was talking on the other side of this question. Last year, and the one preceding, acknowledged to be the best years for the sale of ships ever known in this country, did not afford much opportunity to *realize* in new ships, except for a very short time out of the whole twelve months. One year ago ships advanced after this time five to six dollars per ton, and may do so this year, inasmuch as since September, fifty per cent. of the labor employed on shipping on the stocks, throughout all Eastern Maine and New-Brunswick, to say nothing of Massachusetts and New-Hamp-

shire, have been discharged, and operations are now being carried on with much less rapidity; and a large proportion of ships will in consequence not be ready for market until after the first of January, 1855. In many instances the builders of large ships will cover them, and keep them on the stocks till spring. Others, who command the means, interest masters, and send their vessels to sea on their joint account. While still another class are making stockholders of parties to whom they owe money for supplies, retaining part ownership themselves; so that by this early precaution in adopting the principle of consolidation, there will not be anything like one-half the number of ships originally designed for the market, thrown upon it, as it was thought 60 days ago there would be. As for small ships, barques, and brigs, sales are being made in some instances quite satisfactory, and it is pretty well understood that the supply is not large; and with regard to coasting vessels, they are scarce and wanted. Maine alone wants five hundred sail more than she now has for her lumber coasting trade. This demand has only been postponed this fall by the drought; so in order to supply this want, which will be felt next year, large ships will not be built as freely as heretofore. On the whole, I can see no cause for extreme alarm; but on the contrary, who knows that an extra demand for our large ships will not soon spring up for some foreign trade?

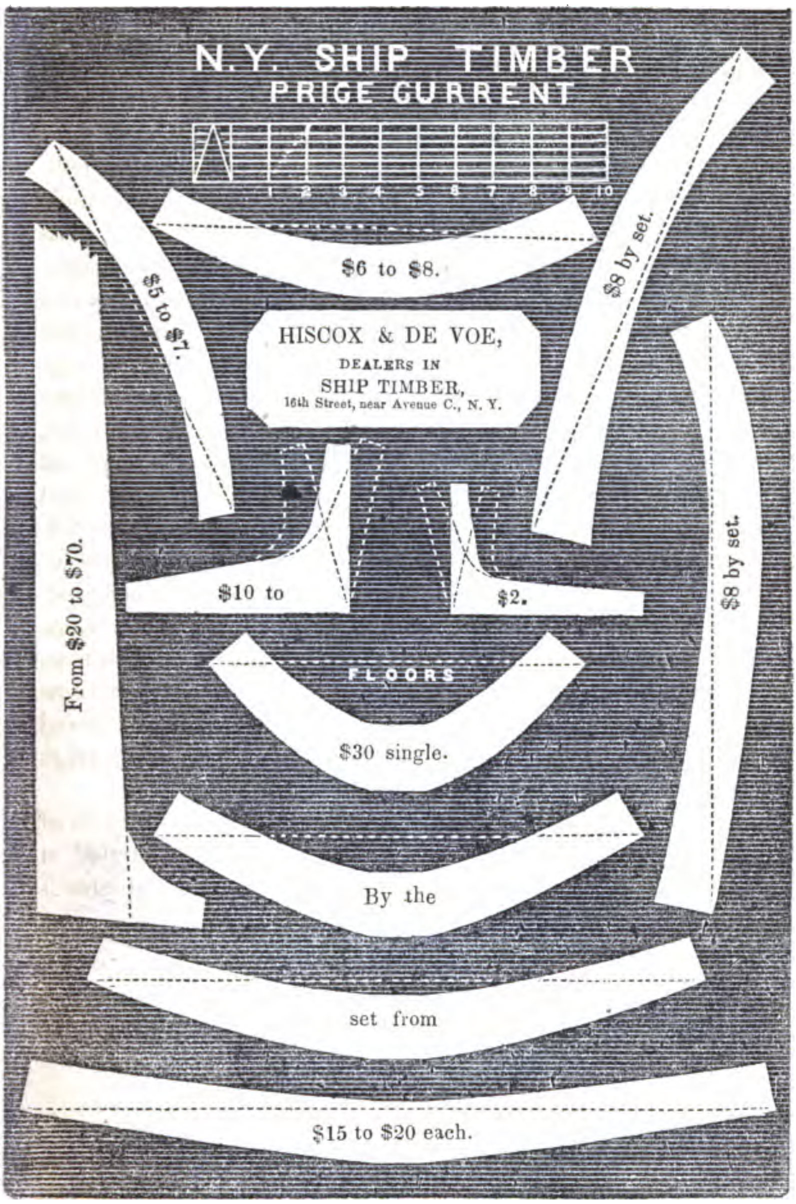
Let all who participate in the possession of this description of property exercise the common prudence that would be used in conducting business transactions in smaller matters, and all will yet be well.

Boston, *Dec. 10th*, 1854.

BOSTON SHIP STOCK MARKET.

Reported by Joel Knight, *Dec.* 19, 1854.

There is no change in the Ship Stock Market, so far as this city is concerned. No inquiry to purchase for consumption, and but little speculative inquiry to note. Prices remain as last quoted, except Hard Pine, which is still more depressed, with little or no sale.



Most descriptions of stock have declined since our last, and the market is decidedly dull. There has been no change in crooks, oak plank, and hackmatack. We quote as follows:—Yellow pine Timber, rough, 40 cents per cubic foot; ditto sawed, $30 per M.; ditto plank, $30 per M.; oak plank, $40 per M.; deck plank, $30 per M.; hackmatack, 25 cts. per cubic foot.

HACKMATACK KNEES AT RETAIL.

5 inch @ $1.62½; 6 inch @ $3.25; 7 inch @ $5; 8 inch @ $8; 9 inch @ $9; 10 inch @ $10.

SCHEDULE OF VESSELS,

With Dimensions and Tonnage, by whom and where built, in the Boston Collection District for 1854.

BY JOEL KNIGHT.

Denomination.	Le'gth. ft.	Br'dth. ft.	D'pth. ft.	Tonnage.	Builders' Names.	Where Built.
Schr. Amazon	—	—	—	247	Joseph Story	Essex.
Ship Weymouth	200	38	24	1,395	J. & J. Boole	East Boston.
" Saracen	189	38	24	1,265	E. & H. O. Briggs	South "
Barque Benin	155	32½	15	692	D. McKay	East "
Schr. Golden Rule	—	—	—	254	Mason & Fernald	Newburyport.
Ship Rambler	182	36½	23¾	1,119	Hayden & Cudworth	Medford.
Barque Moneywich	122	27½	12	368	Mitchell & Rice	Chelsea.
Ship Shakspeare	217	42½	30	1,820	John Taylor	Do.
Barque Amy	114	27	10¾	298	Joshua Magoon	Charlestown.
Ship Santa Claus	184	38½	23	1,256	D. McKay	East Boston.
" Com. Perry	212	45	29	1,963	Ditto	Ditto.
" Oriental	209½	41¼	24½	1,654	Samuel Hall	"
Barque Bounding Billow	120	26½	12	353	Jotham Stedson	Chelsea.
Ship Blue Jacket	224	41½	24	1,190	R. E. Jackson	East Boston.
Barque Warren Hallet	112	26¼	10½	284	A. & G. T. Sampson	Ditto.
Ship James Burns	—	—	—	2,515	D. McKay	"
Barque Starlight	114	27	10¾	298	Joshua Magoon	Charlestown.
Schr. Grace Gridler	103	27	9¾	226	J. N. Devereaux	Wellfleet.
Barque Cossack	238	30½	17¾	586	E. & H. O. Briggs	South Boston.
Ship Osborne Howe	185	35¾	22¾	1,094	Hayden & Cudworth	Medford.
Barque Speedwell	115	27	12	335	Leonard McKewyer	Boston.
Ship Ocean Express	228½	42½	24½	1,937	James O. Curtis	Medford.
Sloop Whip	35	11⅞	3	1,040	D. Lovell	Salisbury.
Schr. S. W. Wilson	37	13⅞	4½	20	C. D. Macomber	S. Boston.
" ———	44½	9⅝	7¼	27	D. I. Lawier	" "
Barque Mystery	115	25⅞	12	328	Wm. Paulding	Duxbury.
Ship Enoch Train	211	40½	28	1,617	Paul Curtis	East Boston.
" Asterion	188	36	24	1,135	J. T. Foster	Medford.
" Barrida Brothers	167	31	21	768	Hugh McKay	E. Boston.
Schr. Triumph	43	14	4	19	Moses B. Tower	Boston.
Steamer Relief	91½	22½	8½	151	A & G. T. Sampson	E. Boston.
Barque Voyager	115	26	12	328	Joshua Magoon	Charlestown.
Ship Neptune's Favorite	193	38¾	24	1,346	Jotham Stedson	Chelsea.
Barque Lamplighter	121	27½	12	365	Hayden & Cudworth	Medford.
" Sarah	103	25	11¼	260	James S. Briggs	Scituate.
" Sam Slick	121	27½	12	367	Manson & Fernald	Newburyport.
Schr. Banshee	23½	8½	3¼	6	Jos. W. Pierce	South Boston.
" Martha Annah	36⅜	12½	4¾	18	Aaron Wiley	Boston.
Ship Alfred Hill	142	29	18	549	John Taylor	Chelsea.
" Cowper	181½	31¼	24	1,024	Joshua Magoon	Charlestown.
" Champion of the Sea	252	45½	29	2,447	D. McKay	E. Boston.
Sloop Starlight	59	21	5¼	54	Samuel C. Loring	Braintree.
Ship Northern Eagle	147	31½	21½	664	Andrew Burnham	E. Boston.
" Nabob	193	37	24	1,245	John Taylor	Chelsea.
" Young Brander	207	39	26½	1,469	Jotham Stedson	"
" Lightning	243	42½	23	2,083	D. McKay	E. Boston.
Brig Pacific	87	23½	8½	156	———	———
Ship Geo. Peabody	195	39⅓	27½	1,397	James O. Curtis	Medford.
" Herald of the Morning	206	36½	24	1,293	Hayden & Cudworth	"
" Challenger	202	37½	23½	1.334	R. E. Jackson	E. Boston.
" Midnight	171	35	21	962	Pettygrew & Fernald	Portsm'th, N. H.
" Fatherland	216	39	23½	1,542	Hall, Foster & Co.	E. Boston.
" Arcadian	152	37¾	20¼	705	Brown & Lovell	"
" Grace Darling	193	37⅛	23½	1,240	E. & H. O. Briggs	S Boston.
" Fanny McHenry	191	37¼	24	1,237	A. & G. T. Sampson	E. "
Schr. Abby Stillman	103	25½	9½	225	Andrew Burnham	" "

Denomination.	Le'gth. ft.	Br'dth. ft.	D'pth. ft.	Tonnage.	Builders' Names.	Where Built.
Schr. Young America	55	18½	6	51	Minot & Chubard	S. Boston.
" Sheerwater	61	19	7	69	S. F. Holbroke	Boston.
Ship Emma	165	35½	22½	858	I. T. Foster	Medford.
" Nor'wester	185½	38½	23	1,267	Sam'l Lapham	"
" Robert Wood	186	37	23	1,181	Hayden & Cudworth.	"
" Ocean Telegraph	212	40⅓	26¼	1,626	James O. Curtis	"
" S. Weller	207	38¾	23¼	1,435	R. E. Jackson,	E. "
" Galalea	182⅗	35	23	1,041	Joshua Magoon	Charlestown.
Steamer D. Webster	131⅔	27⅞	10¼	354	Sam'l Hall	E. Boston.
Ship Starlight	194	26¼	23	1.152	E. & H. O. Briggs	S. Boston.
" Bostonian	183⅝	36	23	1,099	D. D. Kelley	"
" Panther	183	37¾	24	1,260	Paul Curtis	"
" Fleetwing	167	34	22	896	Hayden & Cudworth	Medford.
" Star King	184¾	37	22¼	1,170	G. W. Jackman	Newburyport.
" Hortensia	160¾	32	22¼	701	T. I. Foster	Medford.
Barque Elingo	113¾	26⅓	12	327	Brown & Lovell	E. Boston.

LAUNCHES FOR THE PAST MONTH IN THE U. S.

At Orland, Me., new ship Fanny Fosdick.

At Rockland, a freighting ship of 1286 tons.

At same place, a ship of 707 tons, called Yankee Ranger.

At Damariscotta, a fine ship of 1000 tons, not named.

At Wiscasset, a ship of about 1000 tons, and another of 1200 tons not named.

At Essex, a barque of 350 tons, called Tidal Wave.

At Augusta, a fine ship of 700 tons, called Sybil.

At Cherryfield, a three-masted schr. of 459 tons, called the Augusta C. Brewer. She is the first vessel of this class built on the river, and is said to be the largest fore-and-aft schr. ever built in Maine.

At Brewer, Me., the fine ship Delft Haven, of 941 tons. She is 175 feet long, 34 feet beam, and 17 feet deep.

At Baltimore, a beautiful barque called the Clara Williams. She is about 330 tons. Her length is 132 feet, 6 inches; beam 30 feet; depth of hold 9 feet.

At Rockport, Me., brig of 257 tons, called the R. D. Merriam.

At Newcastle, Me., a ship of 1140 tons, called Telumah.

At Kennebunkport, a ship of about 1100 tons, called Northern Cross.

At Rockland, barque Rambler, of 367 tons.

At Eastport, a copper fastened barque of 350 tons, called Elias Pike.

At Thomaston, by Mr. J. A. Wylie Warren, a barque of 400 tons, called George Warren.

At Cape Elizabeth, a ship of 1000 tons, not yet named.

At Waldoboro', a ship of about 1075 tons, called Ocean Belle.

At Searsport, a ship of about 1200 tons, called Charter Oak.

At Pembroke, Me., a freighting ship of 1885 tons, called Transport.

At Rockland, a barque of 367 tons, called Rambler.

At Bath, a ship of about 1500 tons, called J. P. Morse.

At Damariscotta, a ship of about 1100 tons.

At Portland, new ship Sebago, 1200 tons.

At Elizabethport, N. J., a three-masted schooner of 500 tons register, to be called the Emily Ward.

At Hallowell, a fine barque of 400 tons, called Gov. Hubbard.

At Westport, a ship called the Ocean Pearl, second of the name.

At Belfast, a brig of about 300 tons, called R. C. Dyer.

At Richmond, Me., a ship of about 800 tons, called George Dexter.

At Freeport, a ship of about 1100 tons, called S. F. Perley; also, a ship of 900 tons, called Sentinel.

At Brunswick, a ship of about 600 tons, called Daniel Elliot.

At Lubec, Nov. 21st, a barque of 425 tons, called the Lucy Ring.

At Waldoboro', Nov. 22d, a brig of 260 tons, called Henry. Also, a brig of 270 tons, called Amanda Jane.

At Augusta, Nov. 23d, a ship called the Richard M. Mills. Length 151 feet, breadth 32 feet, depth 22 feet, 700 tons.

At Bath, Nov. 29th, a ship of about 1200 tons.

At Searsport, a barque of 360 tons, called Trovatora.

At South Prospect, a ship of 1150 tons, called Jacob Badger.

At the same place, a copper-fastened barque of 350 tons, called Eventide.

At Robbinston, a ship of 1000 tons; name not given.

At Bluehill, a brig of 225 tons, called Bonne Bird. Same place, a brig called Kenneo, of 170 tons.

At Sullivan, Me., about Dec. 1st, a ship of 750 tons, called the Alma.

At Scituate, a clipper barque of 305 tons, called Daniel Davis.

At Baltimore, 2d ult., a first class ship of about one thousand tons burthen, named James Cheston. Same day a schr. of about 300 tons burthen, called the Manchester.

At Prince's Cove, Me, a beautiful ship of 1430 tons, name given her is Aquilla.

At Salisbury, a beautiful half clipper ship of 500 tons.

At Marblehead, a beautiful half clipper ship of 1200 tons, called Mary.

At Salem, a barque of 410 tons, not yet named.

At Portland, a ship called the Sebago. Also a fine ship about 800 tons.

At Alna, Me., a ship of 1000 tons, not named.

At Newburyport, a ship of 1100 tons, called "Moses Davenport."

At Scarborough (Oak Hill), Dec. 6, ship Oak Hill, of 500 tons.

At Millbridge, a splendid brig of 250 tons, called Wm. B. Nash. Same time and place, a barque of 450 tons.

• Mitchell & Rice, Chelsea, launched a barque of 200 tons, called the Western Sea.

From Green Point, L. I., the clipper brig Balear, designed and built by Mr. Edward Lupton for her commander, Capt. Filleti.

At Bridgeport, Conn., a three-masted schooner of 450 tons, called Queen of the South.

At Robbinston, Me., a barque of about 450 tons, called the La Pierre.

At Eden, Me., brig Alma, 294 tons.

At Round Pond, Bristol, Me., a ship of 900 tons, called Sparkling Sea.

In Bath, a ship of 600 tons

At Alna, by Col. Dennett Weymouth, a ship of 1100 tons.

At Edgecomb, a ship of 1200 tons, called the Chicago

At Northport, L. I., 16th inst., a schr. of 250 tons, called Blackbird.

EDITORS' NEW-YEAR'S GREETING.

With the present Number of the Nautical Magazine, we launch forth upon the New Year. Although the past has been one of disaster to business operations, we are disposed to hope that the crisis is now past, and that we shall soon be called upon to make sail in fairer weather. We therefore extend our kindly greeting to every reader of our pages, fervently hoping that there is an abundance of sunshine to be unfolded from the convolutions of the coming year to atone amply for the past adversity. Success to the New Year, and the new leaf of business. At all events, now is the time to subscribe for the Nautical Magazine. Let those who ought to read this Journal, but do not, and who have only to examine it to become interested, determine at once to begin with the New Year.

What do you say, reader—are we, or are we not, entitled to your support? If our efforts are worthy, then give us your hand for 1855. Orders or subscriptions may be addressed to Griffiths & Bates, 79 John Street, New-York.

THE

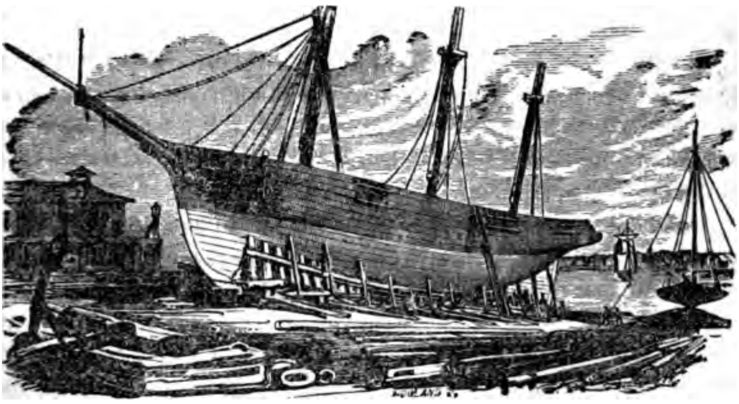
Monthly Nautical Magazine

AND

QUARTERLY REVIEW.

VOL. I.] FEBRUARY, 1855. [No. 5.

Mechanical Department.



ATLANTIC PASSENGER STEAMERS OF 5,000 TONS.

It is quite unnecessary that we should inform our readers that it is equally our province to show what has been, with that which may be done for the advancement of mechanical science in maritime pursuits. In every department of human knowledge, experience not only seeks, but finds, a degree of commensurability; but no department contributes so small a measure in proportion to the amount of mind exercised, or wealth expended, as that of marine construction. Since the induction of steam as a motive power on the Atlantic, there has constantly been an

intuitive desire to narrow its breadth by reducing the time required in making its passage. It will not be a matter of surprise that this desire should be universally prevalent, when we remember that, for *continuity*, its stormy billows find no parallel on the waters of the globe. The suffering entailed upon travellers by sea-sickness and ocean peril, is alone sufficient to invoke the genius of mechanism to secure a transit in the shortest possible time. The hundreds of lives sacrificed to the discomforts and perils of disaster and shipwreck in passenger ships, call loudly for a speedy steam transit, of *life-boat construction*. And why has not so desirable an object been secured? would seem to be the inquiry from the voicings of humanity. Have the means adopted to secure so desirable an object been commensurate with the end to be attained? Does the spirit of progressive science ask for specific privileges, in order that it may be profitable, as well as practicable, to combine belligerent qualities with speed and safety in ocean steamers? Echo waits an answer from the history of the past; and while we pause to learn that answer to so important an inquiry, we may, perhaps, be allowed to indulge in a propensity for pencilling our own thoughts upon this subject.

We do not regard *that* as the best mode to be adopted by the government which gives exclusive privileges to any line of steamers for a term of years, unless that line shall be constructed with *direct reference to war purposes*, when required, and, at the same-time, be second to none in speed and sea qualities. We think that a failure to comply with those requirements should be the signal for terminating a contract at the expiration of the fiscal year, unless a compliance be secured within the period. Had this been the course pursued, we should now have mail steamers crossing the Atlantic within the orbit of a single week. The English line would long since have given up the race, and our government would have had war steamers possessing the finest sea qualities, and of the greatest speed, and would have been saved from the chagrin consequent upon the failures in all our war steamers, which have made our steam Navy a by-word and a reproach. We have been told that all our mail steamers are under the supervision of government with reference to their

construction; but what, we inquire, has been gained by such a course? Is it expected that a man must understand the models of vessels as well as their construction, because he holds a naval commission? and that the amount of knowledge upon the subject of construction is commensurate with his rank in the Navy? How great an error! An exclusive naval school in the art of constructing either sailing or steaming vessels (even by those termed naval constructors) never can keep pace with those of private enterprise. Scientific knowledge *alone* furnishes but a meagre repast to invigorate a progressive mind: hence the reason why our Navy Yards furnish no better *models* in the vessels there constructed.

With Nautical Astronomy, the case is different; one *Maury* may suffice for a nation, but it requires the combined genius of a nation's maritime mechanism to supply its wants in marine or naval construction. In securing the advantages of a contract for a term of years to one company, the *incentive* to improvement is lost, not only to the contractors, but to all others; and it is but too plain that the successful company's vessels, so far from improving with the progress of the age, actually *retrograde* by the law of *depreciation*, without renewal either by construction or purchase; and instead of steadily advancing the speed and consequent safety of ocean mail steamers, the speed is actually reduced, being less than at their first induction. Nothing but this monopoly has discouraged the construction of a line of Atlantic steamers that would have done increased honor to the nation, to the navy, to the postal department, as well as to its projectors, and last though it be, it should not be least, to the cause of *humanity*. Nor do we believe the public mind will be satisfied to witness the construction of a new line of Atlantic passenger steamers modelled for more than seven or eight days' passage, in ordinary weather; the voyage *can, and should,* be brought within that compass.

So near actual construction was such a line of steamers, in the hope that a favorable issue would be furnished by securing an equal chance for government patronage, that the vessels were expanded on the floor, ready at any time to be commenced, within a few hours' notice. The entire management in their

construction, both with regard to the hull, engines and equipment, was intrusted to the senior Editor of the NAUTICAL MAGAZINE, himself a ship-builder, who furnished the plans, specifications and estimates, and was alone responsible in the mechanical and engineering department for their success.

Beyond a few general remarks, we shall allow these estimates and specifications to speak for themselves, believing that no nautical mechanic will fail to discover not only the exponent of utility, but the elements of endurance in the proportions they set forth. Constructed, as they were to be, on the life-boat principle, both with regard to strength and division into compartments, their utility was not the less manifest in being arranged for the introduction of an armament, when the demands of the Navy Department should require their service, their easy draught of water rendering most of the Southern ports accessible, a feat never yet performed by war steamers of only half their size. Being well adapted to the conveyance of passengers of the several classes, they could furnish food and *single berths* for 3,000 passengers—a luxury in ocean travel across the Atlantic not always enjoyed in sailing ships—and yet, with all this seeming incumbrance, the decks could be cleared within a single hour for other service. Their engines (though the vertical beam) could, when necessary, be protected by a covering, placed at such an angle as to be impenetrable by shot. The absolute resistance determined by their shape was less than that of the atmospheric pressure at the highest speed ever yet attained by any line of transit across the Atlantic, which, with their enormous power, furnishes the exponent both of a high and well-regulated speed, rendering them above the subjection to great inequality in the time of performance.

In order that the financial feasibility of this projected line may be at once apparent, the following estimates are made. These estimates are based solely upon passenger transit; no allowance is made for any income arising from the carriage of either mails or freight, which may reasonably be estimated in proportion to the receipts from those sources by other transatlantic steamships.

Estimated Receipts and Expenses, based upon 50 round Voyages per annum; the Ships possessing accommodations for 300 First Cabin and 500 Second Cabin, or 3,300 Steerage Passengers.

EXPENDITURES.

Insurance on ⅔ds cost of ships, at 6 per cent. per annum	$120,000	
Repairs of machinery, hull, cabin, &c., per annum	260,000	
Depreciation, at 10 per cent	300,000	
		$680,000
Officers, crew, &c., $4,000 per month, each ship, 4 ships per annum	$192,000	
Supplies for same, per annum	40,000	
		232,000
70,000 tons of coals per annum, at $5 per ton	$350,000	
Rent of docks per annum	20,000	
Agents' commissions, salaries, expenses per annum	50,000	
		420,000
		$1,332,000
Interest on capital stock of $3,000,000, at 6 per cent. per annum		180,000
		$1,516,000

RECEIPTS.

300 first cabin passengers, at $130, and 500 second cabin, at $75, to and from Europe		$7,650,000
Less, supplies, at $10 each	$800,000	
Commissions and expenses of passage offices and advertising, at 5 per cent	375,000	
		1,175,000
		$6,475,000
Expenditure as above		1,516,000
Excess of annual receipts over and above 6 per cent. on capital stock		$4,959,000

6,000 passengers per trip, to and from Europe, or 300,000 per annum, at $25 each		$7,500,000
Less, supplies, at $2.50 each	$750,000	
Commissions and expenses of passage offices and advertising, at 5 per cent	375,000	
		1,125,000
		$6,375,000
Expenditure as above		1,516,000
Excess of annual receipts over and above 6 per cent. on capital stock		$4,859,000

6,000 passengers per trip to and from Europe, or 300,000 per annum, at $15		$4,500,000
Less, supplies, at $2.50 each	$750,000	
Commissions and expenses of passage offices and advertising, 5 per cent	225,000	
		975,000
		$3,525,000
Expenditure as above		1,516,000
Excess of annual receipts over and above 6 per cent. on capital stock		$2,009,000

1,600 passengers from and 800 to Europe, or 120,000 per annum, at $25		$3,000,000
Less, supplies, at $2.50 each	$300,000	
Commissions and expenses of passage offices and advertising, 5 per cent	150,000	
		450,000
		$2,550,000
Expenditure as above		1,516,000
Excess of annual receipts over and above 6 per cent. on capital stock		$1,034,000

CALCULATIONS OF HULL.

	Length.	Breadth.	Depth.
Principal dimensions	375 feet.	56 feet.	28 feet.
Constructed displacement at 13 feet above base	=	4,461.4 tons.	
Centre of gravity of displacement below constructed line of flotation	=	6.71 feet.	
Area of greatest transverse section = 637.76 feet	=	879 B. H.	
Meta centre above centre of gravity of displacement	=	20.32 feet.	
Moment of stability = $(S \frac{1}{3} y^3 dx)$	=	2,264,740.7	
Exponent of capacity		.57	

SPECIFICATION A.

For the construction (and entire completion in all its parts, in accordance with the accompanying plans, in size, model and arrangements,) of a steam ship of the following dimensions: 375 feet long, 56 feet wide, (moulded,) and 28 feet deep, having two working beam engines of 108 inch cylinder each, and 12 feet stroke, with suitable and proportionate boilers attached, with all the necessary tools and fixtures, as per specification of engines and boilers.

The hull to be completed in the several parts, and to conform to the plans and specifications of the same, to be launched within 12 months of the laying of the keel.

SPECIFICATION OF HULL.

Keel.—To be sided 20 inches, moulded 15 inches, and to be of white oak

Stem.—To be of white oak, to scarph on the dead-wood, and to side and mould in conformity with the lines of vessel, without forming an angle at rabbet.

Stern Post.—To be of white oak, sided 20 inches at head, and to conform to the shape of vessel below water, and, as far as practicable, above tapering to 12 inches on after-edge at base line.

Dead-Woods.—To be of yellow pine, of sufficient depth to cover the heels of the cants or box frames, the several courses to form equal angles, both with the keel and post, and in like manner on the stem, to conform to the size of kelson and post, (sidingwise,) and to be securely fastened with yellow metal through bolts, and additional fastening of iron of $1\frac{1}{4}$ inch calibre.

Timbering Room.—To be 36 inches midships, and from thence to the extremities, 40 inches.

Scantling.—Size of $\otimes$ frame to be 22 inches at keel, 15 inches 4 feet above base line, 10 inches at load line, 6 inches at upper deck; those sizes to be continued the extent of the engine and boilers, and from thence to be reduced towards the extremities.

Floors.—To be of white oak, sided 20 inches under engines and boilers, moulded 22 inches at keel, one inch of which to be let over keel, and the seam thus formed to be calked.

Half Floors.—To be of yellow pine, and with the floors to form a solid platform as far as practicable to obtain them; to conform to the scantling size of floors to the outside of engine kelsons, and from thence to the moulding edge of frame, in straight line.

Centre Kelsons.—To be of yellow pine, and in two breadths midships, and extending double only the length of the engine and boilers, from whence tapering into a single log will form the same to the extremities; in connection with the dead-woods, that portion made up of two breadths will be 12 inches deep × 18 inches broad, and from thence to the ends, 12 inches deep × 18 inches broad; the inboard edges to be bolted with yellow metal, with nealed points, $1\frac{1}{4}$ inch, extending quite through the keel; the outer edges to be fastened with iron of equal calibre, and extending to the depth of the floors where the kelson is double; there are to be two yellow metal, and an equal number of iron bolts in each double floor, what is usually denominated square-fastened. The arrangement of the scarphs to be the best for strength, and a sufficient number of longitudinal bolts of inch iron, to render the whole quite secure. The entire kelson to be made fair on both sides, to receive plates for iron kelson.

ENGINE KELSON.—To be of yellow pine, to conform in size and locality with the requirements of engine, to be square-fastened with iron of calibre in proportion to size of kelson.

FASTENING OF ENGINE KELSON.—To be such as shall be determined best by the engineer.

BUTTS OF FRAMES.—The entire arrangement of the joints of the frames, above the ends of half floors, to be such as shall equally distribute, as near as may be, the strength of the frame through the entire ship.

The head of the double floors to be cut so as to form a recess for the reception of the second futtock, leaving 12 inches of the floor, and forming a scarph of 5 feet in length.

2ND FUTTOCKS.—To be of white oak, sided 11 inches in wake of engines and boilers; from thence to the extremities of hackmatack, if possible; if not, of chestnut, and diminishing to 10 inches (siding) at the extremities of the vessel.

3RD FUTTOCKS.—To be of white oak, in the wake of the engine, and from thence to the ends of the vessel, to be of hackmatack, if possible; if not, of chestnut, to be sided 11 inches midships, 10 inches at the extremities of the vessel.

4TH FUTTOCKS.—To be of hackmatack or chestnut, sided 10 inches midships, 9½ inches at the ends of the vessel.

TOP TIMBERS.—To be of hackmatack or cedar, (if necessary, the crooks to be of chestnut,) sided 10 inches midships, 9½ inches at the ends, and extending to the top of wheel and side houses midships, and to the upper deck forward and aft.

HALF TOP TIMBERS.—To be of cedar or hackmatack, and to extend as high as top timbers in wake of wheel and side houses; the scarphs of the timbers in no case to be less than 4½ feet, and to be fastened with 1 1-16 inch iron, as high as lower deck, and in wake of engine and boilers; from thence to the upper deck and extremities with inch iron frame bolts.

CHOCKS—That separate the timbers of the frames—to be six inches thick where the timbering room is 36 inches, and eight inches where the timbering room is 40 inches; and ports sills to be put in, adapting the vessel to war purposes, if required, as per plans.

CROSS PLATING.—The frames to be cross-plated on the inside of the timbers, with 5 × ¾ inches iron, extending from the head of half floors to rail and to top of wheel and side houses, each alternate half floor receiving the first course in one direction, and the intermediate half floor receiving the heel of the cross-plate. The first course to have an off-set at the place where the opposite course will cross, which must be so arranged that the crossings will come between the timbers, the off-set to be outboard, and to be in depth the thickness of the iron, in order that the rivetings may be made at

the crossings; the plates forward and aft of the boilers may be reduced to $4 \times \frac{7}{8}$ inches, both courses of plates to be let in flush with the surface of the timbers, and bolted to each timber with inch iron midships, and $\frac{7}{8}$ forward and aft—the plates to be kept clear of the gun deck ports, as per plans.

Ceiling.—None will be required where the floor is solid, unless the reception of coal may render it needful; in which case the same to be $2\frac{1}{2}$ inches thick, and calked. The entire hold below the clamps to be ceiled with 5-inch yellow pine.

Lower Deck Clamps.—To be of yellow pine, 7 inches thick, and in 9 strakes of not more than 8 inches wide, to be square-fastened; not, however, until the fastening is all in from the outside. Forward and aft of the engine and boilers the clamps may be reduced to six inches, and 5 inches in thickness at the ends of the vessel.

Lower Deck Beams.—To be of yellow pine, except those over the boilers; those of the exception to be of angle iron, $3\frac{1}{2} \times 6$ inches deep. Timber beams to be sided 15 to 17 inches, moulded 13 inches at centre and 10 inches at ends, to be located as near as may be on every other frame, or in accordance with the deck plan, and one carlin between.

Knees.—Of lower deck, lodge and bosom, to be of white oak, sized $7\frac{1}{2}$ inches to the extent of boilers and engine; from thence forward and aft sided 7 inches, fastening in approved quantity and size.

Hanging Knees.—Of lower deck, to be sided 10 inches midships, nine inches forward and aft of boilers, to be well grown and well fastened.

Water Ways.—Of lower deck, to be of yellow pine 10×14 inches, lying flatwise on the beams, and bolted to all the timbers, upon which there are no hanging knees, and also to all the beams; the second course to be of the same size, extending edgewise on the first, to run into 6-inch sperketing both forward and aft, the clamps of the upper deck being of the same thickness, as also the ceiling between decks, and not more than eight inches wide midships, to be square-fastened and calked.

Main Deck Beams.—To be of yellow pine, and located over those of the lower deck, and so framed that those over the boilers may be removed to receive the same, to side from 14 to 16 inches, to mould 11 inches at centre, $8\frac{1}{2}$ inches at ends, to receive one carlin between, and to be lodge bosom and hanging kneed. Lodge and bosom knees to be sided $6\frac{1}{2}$ inches midships, and to be of white oak as far as the extent of the boilers, forward and aft of which to be hackmatack. The hackmatack both in the frame and throughout the ship, as well as the knees, to be fastened with square iron.

Hanging Knees.—To be of white oak midships, sided 8 inches, and to be well grown; forward and aft, to be of hackmatack, $7\frac{1}{2}$ inches sided.

Deck Plank.—Of both lower and main decks, to be of white pine, $3\frac{1}{2}$ inches thick.

Stanchions.—Between decks to be of tubular iron 1½ inch bore, receiving 1¼ inch screw-bolt through the beams resting on suitable plates of iron at the head and heel. Stanchions on each beam equidistant from centre, as per plan.

Main Deck.—Water ways to be of yellow pine, and of proportionate moulding and siding size, terminating on upper edge in a seam of 3½ inches for bulwarks, which are to be of white pine (except aft, which may be of yellow pine or oak,) to be continued up to the upper deck, and calked.

Upper Deck Beams.—To be of white pine, 5 x 5 inches deep, extending, in conformity with upper deck plan, the entire length of the vessel and secured with hackmatack lodge and hanging knees.

Wheel Beams.—To form part of this deck, being in deck line with same, to be of yellow pine, sided and moulded 20 inches at centre, 16 at moulding edge of frame, 15 at the ends, guards to be formed the length of side houses; the whole to be connected to the wheel beams and supported with knees, king posts and tie rods in the usual manner, and of undoubted proportionate strength.

Deck.—To be of white pine, 3 inches thick, and fastened with wrought or pressed spikes.

Bulwarks.—Above deck, in wake of side houses, to be of white pine, 2½ inches thick.

Engine Frame.—For the support of shaft on guard, to be of yellow pine, and to conform to the plan given by the Engineer. The gallows and other framing to be in conformity with the plans furnished.

Outside Plank.—To be of yellow pine, forming fair line from 4½ inches at rail, 5½ inches at upper deck, 6 inches at lower deck water way. 5½ inches at light line of flotation, and 5 inches on bottom, with six inches garboard, running fair into a tapered rabbet, to be square-fastened, being first cross-fastened with yellow metal, 15 feet above base line, and from thence to lower deck with iron; treenails forming the remaining part of fastening below said deck, excepting garboard strake, butt and bilge bolts: the treenails in no case to be regarded as fastening, unless they extend quite through the timber and plank to the inside of the vessel.

Sap, &c.—The yellow pine throughout the ships is to be clear of sap, and no strake of plank on the outside above the load line of flotation to exceed 7 inches, diminishing regularly into 5½ inches wide at rail.

Paint, &c.—The whole exterior surface, as well as the interior above the lower edge of lower deck clamps, to be planed fair, to be well calked, and to receive three coats of paint on the outside and above lower deck on the inside, and two coats of paint on lower deck clamps.

Pumps, &c.—All the necessary pumps to be of approved kind, size and quality, and sufficient for the discharge of 4½ gallons per minute for each

ton of displacement, with the necessary wells for same, as also the wells for chains, with such windlass, whether of wood or iron, as may be approved, in addition to side windlasses of iron, for working ship, riding and windlass bitts both forward and aft; three capstans on upper deck, the necessary number of side lights between decks, (as per plan,) of such size and quality as may be approved.

Spars.—The necessary spars, whether for standing or as jury masts and yards, with the necessary rigging and sails, as delineated by the approved plans.

Bulkheads.—To divide the forward and after hold from the boilers; also, whatever orlop deck may be required, to extend from the same to the ends of the vessel, with the necessary breast hooks. Cross-rods with turn buckles at each end of boilers, extending from bilge to middle of lower deck beam; also, bulkheads on main deck, for cabin and forecastle.

Ventilators.—A sufficient number of ventilators of the most approved construction, to be furnished and fitted as per plan.

Ground Tackle.—The vessel to be furnished with bower, sheet and stream anchors, for mooring when necessary, with chains of proportionate size, and davits, tackles, &c., for weighing and housing the same, on the guards or elsewhere.

Boats.—To conform in capacity to the number of persons on board, and in size and quality to the law of Congress regulating the same; with the necessary davits, tackles, oars, &c., for their security and use, steering wheel and apparatus attached, with binnacle of proportionate size.

Berth Sacking Frames—And stanchions by which they are suspended with the sackings, to be furnished as per plan, with the necessary tables, utensils, and fixtures for cooking by steam, with extra boiler for same, to which also an engine of sufficient power is to be attached for pumping ship, filling boilers, discharging cargo, weighing anchor, extinguishing fires, or whatever use it may be found necessary.

Joiners' Work.—In the cabin, with the necessary tables, state rooms, mail rooms, water closets and stair-ways, with whatever else the plans may develop, as also that connected with the forecastle, and orlop deck in store rooms, and that usually termed outboard joiner-work.

Copper.—The ship to be coppered with copper of 32 to 28 oz. to a line of flotation, 14 feet above base line.

Tanks—For containing the required amount of fresh water, to be made into the iron kelson in the centre of the ship, and extending to lower deck.

Coal Bunkers.—To be of sufficient size, and so constructed that the bulkhead, or partition dividing them from the engine and boilers, shall support and serve as bilge kelson and hog frame to sustain the ship, in connection with the timbers and lower deck beams.

For specifications of engines and boilers, see the Engineering Department.

JARVIS'S TIMBER TABLES.

NAVY YARD, GOSPORT, VA., *Dec. 21st*, 1854.

DEAR SIR:

I inclose one of my tables of the weights of timber. The object of the tables was, to come as near as possible to the loss of weight by evaporation for one and for four years. I do not pretend to say that the tables are perfect, but they are near enough in precision for all practical purposes. If you think it best to publish the three together, I will forward the other two; the one on White Oak, the other on Yellow Pine. I begin with Live Oak. I shall expect *your* comments on them; *you* will see at once whether any advantage will ever be gained by them. I want you to give *your* opinion, for no man knows more than you do of this neglected philosophy. If you think the tables will not be of sufficient interest to the readers of your excellent Magazine, I shall heartily acquiesce in your judgment. Perhaps other parts of the experiments (of which there are many) would be more interesting than the tables.

Respectfully yours,

JAMES JARVIS.

JOHN W. GRIFFITHS, ESQ.

[We shall reserve our remarks upon the tables until they have all been published, which will be within the present volume. We can, however, assure our readers that it is not for want of matter that we give them publicity, but because we believe them to be the most practically useful timber tables that have ever been published in any country, in any age of the world.—EDS.]

TABLE

EXHIBITING the weight in pounds of twenty-four pieces of Live Oak, one-half of which was hewn to sharp corners, and one-half in the round *in bark*, all kept under cover and unprepared. The Table shows the register number; the cubic contents of each piece in feet and inches; the specific gravity of each piece; the time when felled. Opposite the register number can be seen the cubic contents and specific gravity. Under the month felled is the weight of each piece in the *green tree*, say about eight days from the time of felling. The Table shows the weight of the pieces each month in each year; the loss of weight by evaporation for one year, and the whole loss of weight of each piece for four years. Fractions of inches and ounces are not noticed.

Cubic Feet and Inches in each Piece. Feet.	In.	Specific Gravity of Pieces.	Square and Round Pieces.	FELLED THE 15TH OF THE FOLLOWING MONTH. Sept., 1849.	Oct., 1849.	Nov., 1849.	Dec., 1849.	Jan., 1850.	Feb., 1850.	Mch., 1850.	April, 1850.	May, 1850.	June, 1850.	July, 1850.	Aug., 1850.	Sept., 1850.	Oct., 1850.	Nov., 1850.	Dec., 1850.	Jan., 1851.	Feb., 1851.	Mch., 1851.	Apl., 1851.	May, 1851.	June, 1851.	July, 1851.	Weight of each Piece at the end of four years. Pounds.	Loss of weight by evaporation per cubic ft. for one year. lbs.	oz.	Loss of weight of each piece in one year. Pounds.	Loss of weight of each piece in four years. Pounds.
1	1	1252	Square.	87	82	79	78	77	76	75	73	72	70	69	69												*63	16	9	18	24
2	9	1290	"		224	216	212	210	209	205	200	199	196	193	191	190											175	12	5	34	49
2	9	1289	"			220	214	212	210	206	202	201	197	194	193	192	191										176	10	8	29	44
2	8	1245	"				209	205	201	196	192	190	187	184	182	180	179	178									162	11	10	31	47
2	7	1265	"					205	198	193	188	185	183	181	178	177	176	175	175								161	11	9	30	44
2	5	1265	"						190	185	182	181	177	175	172	171	170	169	168	168							148	9	1	22	42
2	10	1286	"							227	219	212	209	207	204	201	197	196	195	194	193						172	12	0	34	55
2	5	1271	"								195	185	181	178	176	175	174	173	173	172	171	170					152	10	5	25	43
2	10	1239	"									217	202	200	196	194	192	190	190	189	188	187	187				168	10	9	30	49
3	2	1230	"										242	232	228	225	224	221	221	220	219	219	218	217			194	7	14	25	48
2	11	1228	"											224	215	211	209	205	205	204	203	203	202	200	199		173	8	9	25	51
2	9	1278	"												222	213	210	207	205	204	204	203	201	200	200	199	179	8	5	23	43
3	5	1153	Round in Bark.	247	242	236	229	227	225	222	219	216	214	211	209												190	11	1	38	57
3	0	1198	"		222	215	207	206	204	198	196	194	189	188	184	183											157	13	0	39	65
3	2	1183	"			233	231	229	226	222	217	213	212	210	208	205	205										176	8	13	28	57
2	9	1198	"				208	204	200	195	192	190	187	185	183	181	180	179									159	10	8	29	49
3	4	1161	"					242	234	226	218	215	212	207	204	199	196	195	194								165	14	6	48	77
2	0	1139	"						145	141	137	135	132	131	128	127	126	125	124	123							108	11	8	23	37
2	0	1202	"							153	147	141	139	138	136	134	132	131	130	130	129						107	12	0	24	46
3	11	1205	"								293	275	265	260	258	256	255	252	251	249	248	248					222	11	7	45	71
3	0	1180	"									222	213	211	208	206	203	202	202	201	201	200	200				179	7	5	22	43
3	4	1142	"										238	227	221	219	219	216	215	214	214	213	210	209			186	8	11	29	52
3	7	1152	"											260	244	241	249	237	236	234	234	233	230	229	229		202	8	10	31	58
2	7	1179	"												199	181	178	176	174	174	173	172	171	170	169	169	144	11	9	30	55

In the Table there are frequent seeming discrepancies. The whole number of pieces *kept dry* were weighed by three reliable men. Whenever there happened a great difference in the weight of pieces, they were again weighed, and the balance scales examined. When a piece weighed 220 pounds 4 ounces, it was called 220 pounds; and when a piece was under 2 cubic feet, 8 inches and 7 parts of an inch, it was called 2 cubic feet, 9 inches. Hence the discrepancy in the computation.

* This was a small piece, most of it sap-wood.

MARINE AND NAVAL ARCHITECTURE CONTRASTED.

That the Navy of the United States, in point of speed and fine sea qualities, has been left behind in the voyage of nautical improvement by the genius of individual enterprise, is not the fault of American ship-builders. On the contrary, to the honor of mercantile ambition and intelligence, the field of commercial operations has presented by far the largest measure of usefulness to the aspiring architect; and it is no wonder that the talented and active of this profession are now found almost exclusively within the orbit of peaceful mechanism. The superior attractions of unrestricted modelling, wherein the artist is left untrammelled to pursue the bold ideal of science, have never failed to fascinate the mind of genius, and draw it closer into congenial contact with that daring inspiration, which has projected vast and varied undertakings upon the theatre of commerce. The fierce warfare of rivalry for the palm of commercial greatness has thus served to develop the ample resources of nautical skill, by a stupendous effort at *experimental* ship-building, which has taught the architects of the United States not only what extraordinary improvements *may* be made in the text-book of our fathers, (which is the same for naval operations still,) but has elevated the man of nautical science to an altitude which enables him to look forward to what *might be done,* when the spirit of the times shall demand stranger prodigies of marine art.

With regard to the Navy, very few war vessels have been built in the United States within the past ten years; and some of those launched within this period were placed on the stocks as long as thirty years ago. At that time it was not disputed that the weight of science preponderated in favor of our naval architects—a fact which long ago ceased to exist, except in the fancy of declining fogyism. Indeed, the pace of improvement in civil establishments has, more than once, been too great for our naval institutions to follow within focal distance; and knowing that the spirit of the age was somewhere in advance, the latter has made a desperate effort to come up by going abroad to *foreign* countries, seeking to learn there what could be taught

only at *home;* while the foreign mechanic, with intuitive step, hastened to yards of the private builder on the shores of the New World, to replenish his budget of knowledge.

The many hulks that are found, at this day, floating the naval batteries of the United States from sea to sea, in majestic movement, slow and uncertain; or, as the *Pennsylvania,* drifts from one port to another, with attending transports to carry her armament, attest the spirit of naval operations, when compared with those of the mercantile service. It is now found that our ship-houses require lengthening, to admit of elongating the few Chinese-like monuments of hoarded naval skill, so as to enable them to come forth upon American waters without discrediting our nautical fame. The government is now engaged in sharpening out the globular fabrics which have long been standing in the sheds of our navy yards; and it is hoped that, henceforth, no obtuse counsels will commit the folly of hazarding the glory of American genius, from the platform of an ill-grounded conceit, that all that is ever worth knowing, in naval architecture, is already possessed by the ruling wise-acres of the times. From the past history of naval operations in the United States, we may learn that democracy is wisdom—that every age is quite equal to the duties of its time; and that those who come after us will be best qualified to construct their own fleets, all preceding ages to the contrary notwithstanding. It was the arbitrary act of an aristocratic intelligence which modelled, and then moulded up, numerous frames for frigates, corvettes, and steamers in the navy yards of the United States, many years ago; which frames are now condemned, in consequence of being worked out and bevelled from inferior models, which the Department have become ashamed to build from. Much money and labor have thus been wasted, and sheds full of timber destroyed, by a fruitless effort to perpetuate an effete condition of naval architecture upon posterity. The abilities of mankind are ever sufficient for the demands of the age.

There exists no doubt of the great utility of possessing a few new and superior vessels of war, as soon as the national energies can call them into existence. We want steamers and frigates, or sloops of war. Of the former, there are already six recently

placed under construction, and at least as many first class frigates, or sloops of war, should be ordered. These vessels should embrace every known improvement in nautical mechanism, and of easy draught of water, adapted to entering our Southern ports. With such a model as our marine architects alone can furnish, of undoubted strength in construction, with a proportionate propulsory power, and an efficient armanent, this small addition to our navy would prove invaluable in the day of action. It is beyond successful controversion, that the United States require a small, but serviceable, naval force—and a *mixed one of steam and sail* will be found most useful for the purposes of its employment. Our present naval force has fallen behind the age; none of our commercial classes of vessels are well adapted to first or second class vessels of war; and our only remedy for these evils consists in the construction of a few superior ships, steamers and sailing vessels. These should be built on the *life-boat* principle, inasmuch as the *utmost security* in construction is a *fundamental* principle of naval architecture. We would respectfully refer the reader to our article, with plates, upon this subject, in the preceding number, as we deem the improvement suggested and described therein to be one of the most valuable among those of this prolific age.

Deeming the following proposal to the Navy Department of the United States as not only interesting, but instructive, in connection with these remarks, we have obtained the consent of Mr. Griffiths, (the senior proprietor of the NAUTICAL MAGAZINE, who has spent twelve years of his life in the Navy Yards of his country, in addition to his ripe experience in commercial operations,) to its insertion. This proposal has been on file at Washington since its date, and open to the government for consideration. No formal notice has yet been given to it, although Mr. Griffiths proposed to use a large proportion of timber which has been condemned, in consequence of being worked out after inferior models, and now likely to be entirely lost to the government, in the construction of a steamer or frigate :—

"NEW-YORK, *January* 10, 1849.

"*To the Chief of the Bureau of Construction, Equipment, and Repairs*:—

"SIR:—Presuming that you are prepared to entertain such propositions for improvements as are feasible, I have been induced to propose a concentration, in any description of war vessel, of such improvements as have placed our merchant marine, in many respects, far in advance of other nations, (notwithstanding the tonnage laws have been, and are still, a direct barrier to every improvement in maritime enterprise in the United States.)

"Having been immediately connected with the construction of several of those mail steamers now building in this city, and for a number of years been employed in modelling and building the fastest sailing ships out of this port, I have thus gained some experience, which, in ocean steam navigation, is deemed to be the palladium of success. This experience has taught me it is all-important that the responsibility of determining the amount of power, as well as the location of the engines, should rest on the builder. It is the builder who best knows the amount of resistance to be overcome, and its ratio of increase at every degree of speed, and at every line of flotation. Entertaining these views, I propose to build a war steamer, in one of the government yards, of the materials therein provided, by the day, or by contract; making use of at least *sixty-five per cent.* of such frame as may have been prepared for such purpose: said steamer to be able to make a passage across the Atlantic, or from this city to Liverpool, within 9½ days, in ordinary weather.

"My second proposition is to build a sailing vessel, in the place and manner above stated, that shall sail faster, by at least one-half mile per hour, than any vessel of the same amount of displacement belonging to the Navy of the United States; using in her construction not less than 60 per cent. of such frame as may have been procured for a corresponding sized vessel. *Provided*, that in the first proposition my limitations extend no farther than the weight of ordnance and the necessary equipments to be sustained; and in the second proposition, to the displacement required.

"I am aware that my first proposition will come in collision with an opinion, (which has gained credence,) that vessels being sharp on their lines of resistance, cannot be built sufficiently strong to sustain the weight of the extremities, and at the same time retain their shape longitudinally. But I am prepared to demonstrate the fallacy of that opinion.

"For my ability to accomplish what I have proposed, I most respectfully refer to the accompanying testimonials; and to my reputation in connection with the impetus I have given to improvements in my native land, of which there is tangible evidence in this city and elsewhere.

"JOHN W. GRIFFITHS."

Such was the proposition which, six years ago, was found to be so far in advance of the views of the Bureau, that, not only on the score of naval economy, but of science, it appears never to have been seriously entertained; but which, at this day, reads so moderate and unassuming, to the advanced master of nautical science, that a smile is provoked at the blind unbelief which doubted the feasibility of accomplishing the object of the proposed improvements.

This was nothing less than to build superior steam or sailing ships from the very timber which naval architects had spoiled, and then condemned. They did not risk the experiment.

However desirable it may be to the American people to secure a commensurate degree of advancement in naval architecture, when compared with the merchant marine in this country, it may well be held in doubt, whether those who are now unprepared to admit as possibilities the things which almost daily occur as facts, are entirely qualified to direct those revolutions in ship-building which alone are calculated to accomplish satisfactory results. In view of a proposition of superior character which might now be made, foreshadowing more advanced anticipations in naval architecture, Mr. Griffiths has thought proper to withdraw the above; and, with other marine architects, holds himself in readiness to respond to the call of our common country, if ever the hour of adversity shall demand the hands of original genius upon the models of her vessels of war.

BATES.

PACKET SHIP LANCASTER, OF PHILADELPHIA.

Editors of the Nautical Magazine:—I will proceed to give you a description of one of our three-decked ships now building by Messrs. Vaughan & Lynn, and nearly ready to launch. She is named the *Lancaster*, and is similar, as to shape, except the dimensions, to the well-known ship *Westmoreland*, built by the same firm, for the same owners, Messrs. Penrose & Burton, of this city.

The *Lancaster* is 187 feet on deck, 37 feet beam, 31½ feet hold. Keel is sided 16 inches, and moulded 34 inches; the

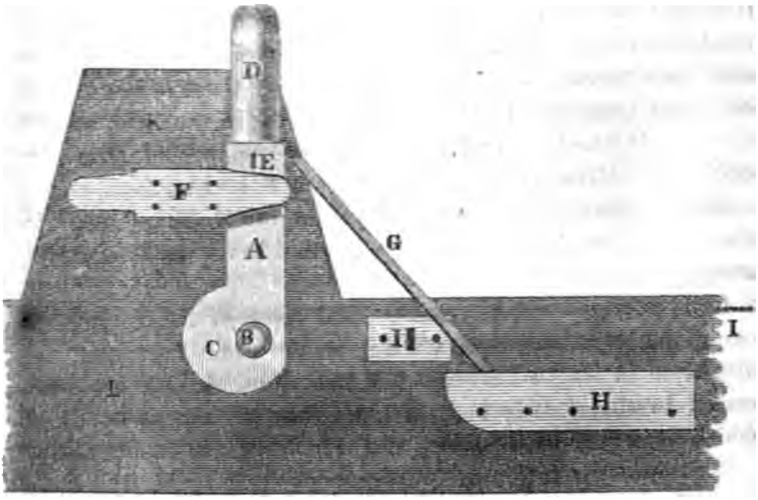
kelson is sided 16 inches, and moulded 32 inches. Timbering-room and space are 28 inches. The frame is moulded 19 inches at throat of floors, 15 inches at bilge, and 6 inches at rail. Ceiling from floor-heads to upper part of bilge 8 inches thick, diminishing to 5 inches at lower deck clamps, bolted edgewise with $\frac{7}{8}$ inch iron, four feet apart. Lower deck clamps, in two strakes, are 6 inches thick, also bolted edgewise, four feet apart. Lower deck beams are sided 16 inches, moulded 15 inches by 10 inches at ends. Main deck beams sided 14 inches forward and aft, and 16 inches at midships; moulded 11 inches by 9 inches at ends. The upper deck is what is termed a light deck, and is an alteration from the original contract, supposed to be an improvement. The beams are sided 10 and 12 inches, moulded 7 by 6 inches at the ends. The knees in the lower hold are white oak, sided 10 and 12 inches; those of both upper decks are hackmatack. The entire ceiling in the hold, and all the outside planking from "light water" up, are of Delaware white oak. The garboard strakes are 8 inches thick, bolted edgewise through the keel with yellow metal. The space in the clear between the beams of main and lower decks is 4 feet, 9 inches.

I will now give the dimensions, and some of the performances, of the *Westmoreland*, stating, at the same time, that the difference in length between the two ships, 19 feet, has been placed in the midship body of the *Lancaster*, except two feet, which is added to the bow, and which has as much hollow thrown into the lower water-lines as possible, by holding close to the forward square frame of the *Westmoreland*. The latter ship is 168 feet long, 35 feet 8 inches beam, 22 feet 9 inches hold, and has a long poop, extending to the mainmast. She has made three trips from Philadelphia to New-Orleans in 9, 10, and 12 days each, respectively, and from the latter port to Liverpool, with 3,626 bales New-Orleans cotton, weight 1,622,-872 pounds, (equal to 724$\frac{1}{2}$ tons gross,) in 28 days, and accomplished the west trip in 29 days. From Philadelphia to Liverpool with 15,600 bbls. flour, (equal to 1,532 tons gross,) draught of water 21$\frac{1}{2}$ feet, she made the passage in 21 days; and has since made three successive passages in 27, 30, and 32 days each, respectively.

I have carefully avoided any extravagant statements, believing that your Magazine is intended for the benefit of all, and not individual builders; but you will admit, I think, that the above performances of a ship carrying such an enormous freight are certainly extraordinary. I have already written more than I intended, therefore no more at present from

Yours truly, PHILADELPHIA.

IMPROVEMENT IN DOCKING VESSELS.



Crandall's Keel Pall.—The above engraving represents a view of a much needed and highly valuable improvement in docking vessels. It is well calculated to insure safety and dispatch in bringing a vessel upon the blocks; and will, no doubt, come into general use as soon as its advantages are known. Although of very recent origin, the invention has been already introduced in Boston. The keel pall consists of a cast iron tube, A, with a protuberance, which serves as a weight on the lower end, that gives it a tendency to keep upright. Into the tube is inserted a wooden spindle, which can be raised and se-

cured with a screw, E. There is a brace, G, from the tube to the bearer log, with a ratchet, H, for it to play into; and a spring ketch, I, to hold the tube in a horizontal position. The rope, J, is to trip the spring, and let the tube come up perpendicular. K is a transverse section of a keel block; and L is a bearer log athwartships the dock.

The Operation.—Set the spindle up one, or one and a half feet, and turn the screw, E, sufficient to hold its weight; then throw down the tube, A, E, D, until the spring, I, catches it and holds it. (They are made in pairs, and attached to the keel blocks, fore and aft, along the dock. The engraving shows but one, which we think is sufficient to illustrate the invention.) Now haul the vessel into the dock to the windward of the keel blocks, and then trip or raise the palls upon the lee-side, and slack the vessel away against them. Then trip or raise the windward palls, and you have her confined by the keel over the blocks. When the vessel settles, the spindles, D, will slide down into the tubes, A, when the garboard reaches them.

Mr. Crandall is also connected in the invention of another kind of pall, of a more simple construction, which will be very cheap, and answer the purpose on some kinds of docks. It consists of two pieces of wood, arranged so that they can be raised or lowered while under water, and are attached to the keel blocks by iron straps. For further information concerning these useful inventions, inquire of the inventor, Horace J. Crandall, New-Bedford, Mass., who is a practical ship-builder.

UNITED STATES SLOOPS OF WAR ALBANY AND PORTSMOUTH.

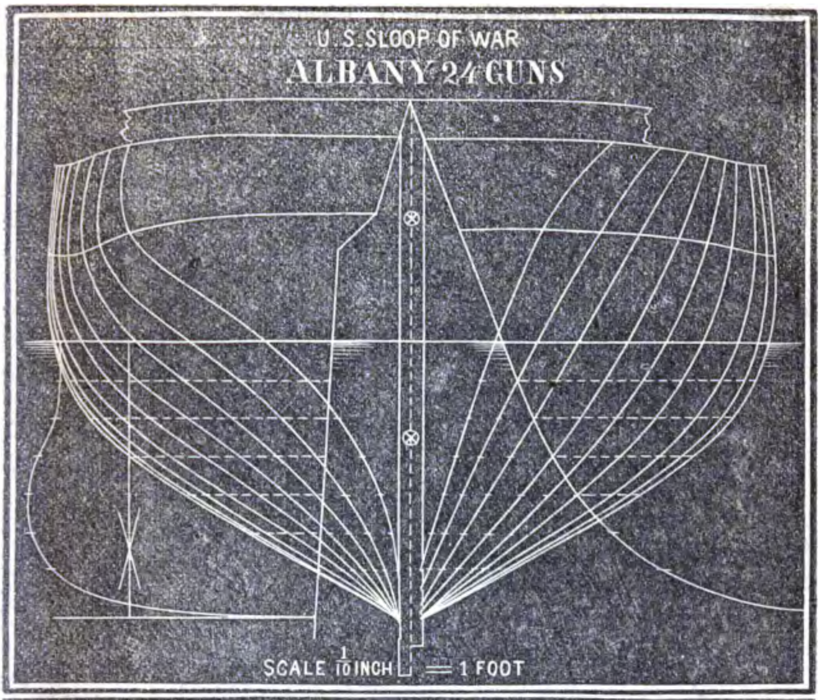
The supposed loss of the U. S. Sloop-of-War Albany has furnished the occasion for no inconsiderable amount of criticism at the hands of certain writers, who have undertaken to repudiate her model, and most unjustly misrepresent, not only her general character, but her principal dimensions. Laboring under a false impression regarding the breadth of the Albany, one writer has ascribed her loss, if true, to the consequences of a "narrow beam," and her "extreme leanness, without a corresponding

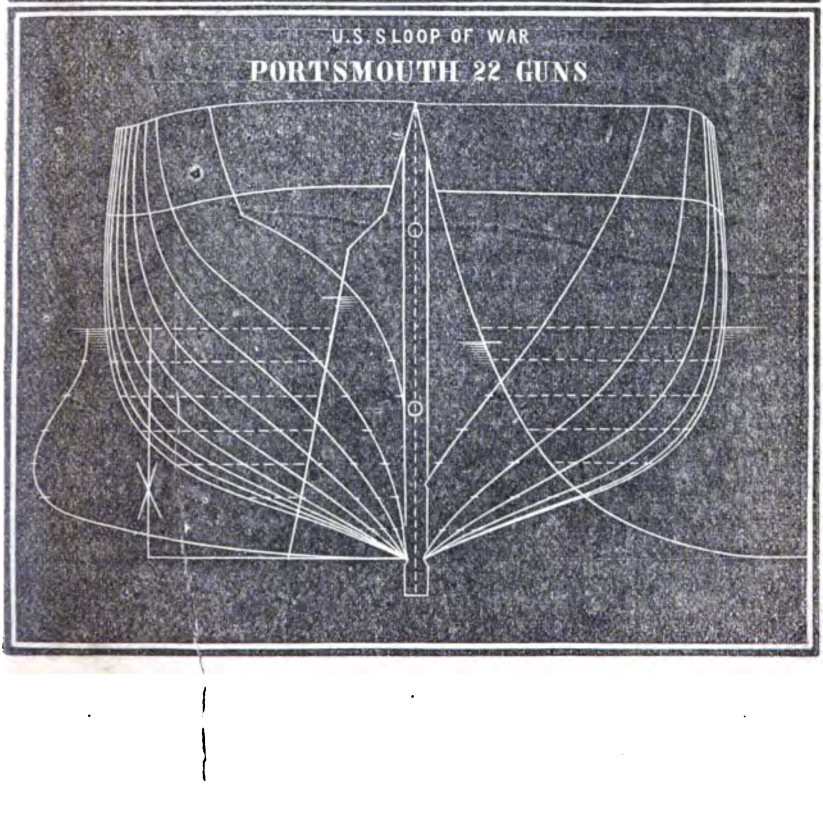
floor." Another represents her as having "no bottom," whence it might be inferred that the ship had no stability. Neither of these criticisms has any foundation in fact or science. It is not the first time that the reputation of a ship-builder has been called in question by naval amateurs; who, perhaps, know the two ends of a vessel apart, by the bowsprit and the rudder only. Indeed, it has become quite too common for this class of knowing ones to make wholesale denunciation of all they do not understand.

Among the many advantages of our position, it happens that we are in possession of the tables of the Albany, from which we have projected her draught, and made calculations. And for the reason that the Sloop-of-War Portsmouth had been named in comparison with the Albany, being pointed out as her superior, and "probably the finest corvette in the world," we determined to obtain her lines, and submit the whole question to the marine and naval architects of the United States.

We believe these vessels are the first in the U. S. Navy that have thus been presented, in a tangible illustration, to the readers of American literature, but may not be the last.

The Albany was built by Francis Grice, Esq., Naval Constructor, and was launched in 1846. The Portsmouth was built by Josiah Barker, Esq., Naval Constructor, now deceased. These vessels are two of the six large sloops-of-war whose keels were laid in 1843, and built by six different naval constructors, designed to develop the best models which their builders could produce. It will therefore be interesting for those who are acquainted with similar efforts, which were begun subsequent to that time in the merchant yards of New-York, by private builders, and which gave to the commercial world the Rainbow, the Howqua, and the renowned Sea Witch, and thus inaugurated the era of clipper ships; to compare the altitude of naval perfection with that of marine mechanism. Whether for burthen or for speed, these early clippers had no match among modern sloops-of-war, of any Navy whatsoever. We make these remarks in no derogatory sense with respect to the very important improvements which our naval constructors were enabled to introduce in the construction of these vessels; to the credit of


U.S. SLOOP OF WAR
ALBANY 24 GUNS
SCALE $\frac{1}{10}$ INCH = 1 FOOT


U.S. SLOOP OF WAR
PORTSMOUTH 22 GUNS

[illegible] are perhaps the [illegible] influences [illegible] systems [illegible] complaint if [illegible] they are want- [illegible] unflinching [illegible]

[illegible]

	[illegible]	[illegible]
[illegible]	[illegible] feet	[illegible] 62 feet.
[illegible]	[illegible]	[illegible] "
[illegible]	[illegible]	32.54 "
Area [illegible]	[illegible]	[illegible]
Centre of gravity [illegible]	[illegible] feet	4 [illegible] feet.
[illegible]	[illegible]	[illegible]
Area [illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible] feet	[illegible] feet
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
Centre of gravity [illegible]	[illegible] feet	[illegible] feet.
Centre of gravity of [illegible]	4.16 "	[illegible] "
Moment of stability [illegible] = [illegible]		[illegible]
Height of *meta-centre* above centre of gravity	11.[illegible] feet	[illegible] feet

It will be seen, both by the calculations and the draught, that the Albany is a wide ship in proportion to her length, and her theoretical stability is very great. The Portsmouth is a longer ship in proportion to beam and depth, with less displacement and stability, according to the calculations. She has, however, the finer midship body to secure practical stability at the present designated line of flotation in each draught. In this respect, a deeper immersion of the Albany would improve this quality, so far as the midship body is concerned. As it is, she performs her

cruises without ballast. Before the wind she rolls deeply, and also lurches deeply, but without straining in lying-to, and is considered dry and easy.

It is generally conceded by naval architects that vessels of war are less complex in design than freighting vessels, inasmuch as the war vessel is to be constructed with reference to one determinate line of flotation, while the freighting vessel requires to be adapted to several lines of flotation, and various draughts of water. The leading characteristic of model, in the case of the Albany, is an extremely *sharp bottom.* All the virtue that there can be in "dead rise," must be possessed by this ship in a remarkable degree. On the other hand, the Portsmouth, with less dead rise, but with a superabundance at that, is distinguished for great relative *length* and *sharpness* of after body. As a long handle to a dull tool is a waste of timber and exertion, so a long run to a ship with a full entrance is a waste of buoyancy and canvas, and consequently the error of the modeller is only amended by trimming the vessel by the stern, to bring the bow up, and thus *equalize the resistance* on the two ends. The laws of propulsion must be obeyed by the mariner, notwithstanding they have been ignored by the builder, or there is no speed to be obtained in a ship having the bowsprit on the wrong end. It will be seen that the fore body of the Portsmouth is thirty-four feet shorter than the after body, according to the location of the greatest transverse section, while the centre of buoyancy is found five feet three inches forward of the middle of load-line. The floor is hollow, which very materially aided to reduce the angle of resistance on the lower lines of the bow ; and, indeed, the modeller has done about the best for shape that could be done with such a short fore body. Yet we are assured that the fulness of the bow had to be eased by a trim by the stern ; and an officer on board relates, that it is the custom to haul her bridal port guns aft, and lash them to the main-mast, in order to quicken her performance under sail. In other words, the centre of buoyancy, and the greatest transverse section, require to be brought aft, remodelling the bottom and equalizing the resistance on the two ends of the vessel. In the case of the Albany, a trim of 18 inches by the stern was the design of the builder,

and she sails, it is said, equally well anywhere between that trim and three feet; but the Portsmouth was not modelled, as she was assumed to be by her builder, with direct reference to an even draught of water. She has a fine after body, without any hollow lines, with a very fair line of flotation. The fore body is short, but as sharp on the line of resistance as it is possible to make it without more rake of stem. In proportion to circumscribing parallelograms, her greatest transverse section, plane of flotation and displacement, are seen in the calculations to have a very low, or small, exponent; whence we might conclude that she ought to be distinguished above our clippers for speed, most of which have decidedly fuller midship bodies. It is true that in the Navy, under a modification of models as shown, the Portsmouth has acquired a very high name for her performances; but, under such a false theory of design as hers, no sacrifice of buoyancy or displacement, no degree of sharpness, whether in skeig or dead-rise, would render her a match in the wake of the clippers of her own day. It requires more than *one* "fast" end to adapt a vessel to velocity. We may learn from this, and similar examples, that it is an uncompensated waste of displacement, and needless increase of draught, to cut away a model to the proportions of a fish, in the expectation of developing speed. Nor is any just compensation for a mal-distribution of shape to be found in a subsequent departure from the builder's line of flotation. In the drawing, we have assigned to the Portsmouth a moderate draught by the stern, such as would be required to approximate an equilibriation of the two bodies.

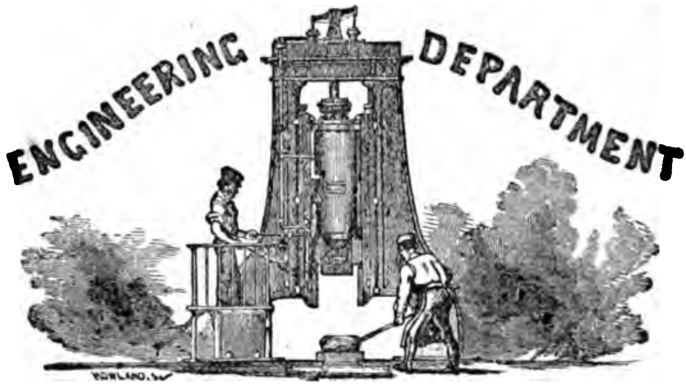
The Albany is an extremely sharp vessel. The exponents are very low. We doubt if there is as sharp a bottom on any other vessel of any magnitude in the United States; and if she only had commensurate length, with proportionate acuteness of way forward, with light ends, and then ballasted to bring her breadth down into the fluid, she would have no superior among war vessels in any sea. As it is, she is considered by those who have commanded her to be superior to most ships in the U. S. Navy. Notwithstanding her sharpness of bottom, she is not so weatherly as the advocates of this theory of shape ought to expect.

The reason will be found in her round side-lines, and in the plane of the bottom reaching quite to the surface, presenting, under the inclination of sail, an easy incline to leeward. With less dead-rise, and a fair development of bilge and side under water, her performances would have been vastly better in this respect. Her midship section is far better located than in the Portsmouth, being nearer the centre of gravity of displacement and the centre of length;* consequently she is less affected by an alteration of trim, as we have said before, and may be sailed at her builder's line of flotation, which cannot be said of very many vessels built at the present day.

Close hauled in top-gallant or top-sail breezes, she has frequently made 9½ to 10 knots. But her best point of sailing is with a free wind; she has frequently made 277 knots, with a fresh breeze, in 24 hours, averaging a fraction over 11½ knots, and sometimes running as high as 13 knots. She does not require pressing. Her motions at sea are easy, but sluggish. She steers and lies-to well. As originally masted, by the rules for masting ships in the U. S. Navy, she was too taunt, and her masts were subsequently shortened about 8 feet.

Much anxiety is now felt for her safety, but we trust it is not in vain to hope for her safe return.

* Location of the Centre of Gravity of Displacement in British Ships of War.—From the calculations of modern built ships of war in the British Navy, we discover that there has been a decided improvement in the location of the centre of gravity of displacement, and also of the centre of gravity of the load water plane. In this respect, the constructors of the British Navy are approximating the results of scientific ship-building with a commendable degree of wisdom. The private builders of the United States were the first to demonstrate the propriety of bringing this point aft to, or abaft, the mid-length of load-line, even in freighting vessels; and vessels for speed demand it still farther aft. In 33 vessels of the British Navy, the greatest distance of the centre of gravity of displacement, or centre of buoyancy, forward of the mid-length of load-line, is 0.097 feet, or not quite one-eighth of an inch; in the Portsmouth it is 5.25 feet; and the greatest distance of the centre of gravity of load water plane, forward of mid-length, is 0.008 feet, while in the Portsmouth it is 4.07 feet. These vessels range from 120 to 10 guns. In the *Royal Albert*, *Queen*, Arethusa, and the Phaeton, (of 50 guns, and the best of her class,) these points are near one-eighth of an inch abaft mid-length. Will our Naval Constructors inform our readers how these points are located in the new steam frigates?



ENGINES AND BOILERS FOR AN ATLANTIC PASSENGER STEAMER OF 5,000 TONS.

The engines to be constructed will be the vertical beam engine with double balance valves, with boilers, in number and capacity, such as shall be sufficient to evaporate a supply for engines of 3,500 horse power.

Cylinders, two 108 inches diameter, with a stroke of piston of 12 feet, to be of cast iron, accurately bored, and flanges and steam openings, faced bands, brackets on front to receive rock shaft bearer, with flanges for guides cast on same.

DESCRIPTION OF ENGINES.

Bed Plates.—Of cast iron, containing the usual channel of communication between condenser and air pump, with sufficient number of ribs for strength, and holding down bolts in quality and quantity without stint.

Condensers.—Of cast iron, to be fitted to bed plate by a face and rust joint, to be cast with flanges, and on side for securing to gallows frame.

Cylinder Pistons.—Of cast iron, with double shell, ribbed the whole depth, to have two wrought iron bands shrunk on, to be fitted with spring packing and cast iron rings.

Piston Rods.—Of wrought iron, firmly secured to piston cross-head and connecting links.

Working Beam.—Of wrought iron, with heavy wrought iron belt, forged in one piece, with eyes of sufficient size to receive pin.

Connecting Rods.—Of wrought iron, fitted with brass boxes for crank pins.

Cranks—For water wheel and centre shafts, to be of wrought iron, accurately bored to suit shafts.

Crank Pins.—Of wrought iron, turned to suit cranks and journals.

WATER WHEEL SHAFT.—Of wrought iron, accurately turned in the journals.

CENTRE SHAFTS.—Of wrought iron.

AIR PUMPS.—Of cast iron, accurately bored and lined with composition, flanges to be faced.

AIR PUMP COVERS.—To be of cast iron, with stuffing boxes and glands, bushed with brass.

AIR PUMP BUCKETS.—Of composition, with valves and seat of brass accurately fitted.

RODS FOR AIR PUMP BUCKETS.—Of brass or iron, covered with copper turned to suit stuffing box in air pump covers and eye of bucket.

FOOT VALVES AND SEATS.—Of brass, accurately fitted and well secured in channel plates.

DELIVERY VALVES.—Same as foot valves.

CYLINDER COVERS.—Of cast iron, double shelled, and ribbed with stuffing box, and gland bushed with brass, to be turned to fit cylinder, and top side turned.

RESERVOIRS.—Of cast iron, with nozzle cast on to receive waste water pipe, and to be well secured to condenser.

STEAM STOP VALVES.—Chests of cast iron, valves of brass, valve stems of cast steel.

INJECTION VALVES.—Chests of cast iron, valves and seats of brass.

BOTTOM VALVES.—For boilers and engines, chests of cast iron, valves and seats of brass.

BLOW THROUGH VALVES.—Chests of cast iron, valves and seats of brass.

Cylinder oil cocks of brass.—Racket oil cups of brass.—Siphon oil cups of brass.—Oil cocks for feed pumps of brass.—Barometer steam guages.—Barometer vacuum guages.—Hydrometers.—Thermometers.—Indicators.—Clock.—Oil cans.—Oil pans.—Globe lamp.—Bunker lamps.—Lamps for engine room galleries.—Oil measures.—Tallow kettles.—Gong and hangings for engine room.—Dress pans.—Dress pipes.—Two coats of paint on all unfinished work.—Stairways and ladders for engine room of iron.—Steam pipes of copper.—Feed pipes of copper.—Injection pipes of copper.—Blow-off pipes of copper.—Arrangement of approved pumps to act in case of fire.—Waste water pipes of copper, with slip joints.—Railing for engine room of brass.—Felting for steam pipes and cylinders.—Wood casing for steam pipes and cylinders.—Engine room floors of cast iron—and tools to be selected to the value of $500.

WATER WHEEL CENTRES.—Of cast iron, with sockets cast in to receive the paddle arms, to be well ribbed and banded with wrought iron, keys of wrought iron.

ARMS.—Of wrought iron, for a wheel of 47 feet diameter at periphery,

the outer rim to be of double thickness of iron, the inner rings single thickness, the arms to have T ends, and all to be well riveted together in a substantial manner.

DIAGONAL BRACES.—Of wrought iron, to brace the wheel diagonally, to be securely riveted to the arms of the wheels.

BUCKETS.—Of white oak, of a proper length, width and thickness.

BUCKET BOLTS.—Of wrought iron, to bolt the buckets securely to the arms.

OUT BOARD DELIVERY VALVES.—Valve chest of cast iron, valves and seats of brass, to be well fitted and secured to the skin of the vessel.

STEAM CHEST.—Of cast iron fitted, valves and seats of brass, valve stems of cast steel, bonnets to be turned.

SIDE PIPES.—Of cast iron, with expansion joints.

ROCK SHAFT.—Of wrought iron, with arms and toes attached.

CUT-OFF.—Of most approved construction, at 4 and 6 feet.

ECCENTRIC WHEELS.—Of cast iron, bored to suit the shafts, and turned to suit the eccentric bands.

ECCENTRIC RODS AND BANDS.—Of wrought iron, turned.

VALVE RODS —Of wrought iron.

FEED PUMPS.—Of composition, plungers, valves and seats of brass, with safety valve for waste feed water.

OUTBOARD PILLAR BLOCKS.—Fitted with brass boxes, and bolted securely to guards.

SPRING BEARINGS.—Of cast iron, lined with anti-attrition metal, and bolted to the gunwale of the ship.

STEAM PUMPS.—Of the most approved construction.

HAND FEED PUMPS.—Of brass.

BILGE PUMPS.—Of composition, valves and seats of brass.

APPENDAGES TO BOILERS.

Water jacket of plate iron.—Smoke pipe of plate iron.—Man hole mountings of cast and wrought iron.—Hand hole mountings of same.—Dampers of plate iron.—Ash pit doors of plate iron.—Turn buckles for holding down boilers of wrought iron.—Grate bars.—Fire ions.—Ash tubs.—Ash shutes.—Ash cylinders.—Bunker cars.—Felting for boilers.—The necessary sheet lead for boilers.—Oil and tallow tanks of plate iron.—Two coats of paint, both in and outside of boilers.—Oil cement for bedding boilers.—Fire room floors of cast iron.—Coal bunkers to conform to plans furnished, with all the necessary bracing.

TWO BULKHEADS.—Of plate iron, to divide the engine and fire rooms

from the forward and after parts of the ship, to connect with iron kelson midships.

THE ENGINE AND BOILERS.—To be placed on board and secured in the most approved manner, and to be subjected to proof as to the substantial quality of all its parts.

PACIFIC STEAM NAVIGATION.

THE UNITED STATES STEAM FRIGATE SUSQUEHANNA, lately attached to the Japan Expedition, under Commodore Perry, has made the first voyage across the North Pacific. From the San Francisco papers we have gathered the particulars of this voyage, which has been highly applauded by the same authorities, who also praise the frigate as a "noble specimen of naval architecture." Her "magnificent proportions were the subject of universal commendation" at San Francisco.

The Susquehanna was modelled by the Chief Naval Constructor, and built at Philadelphia, and sailed for the Pacific on her first cruise in 1851. Her engines and boilers were designed by Charles Copeland, Esq., and constructed by Murray & Hazlehurst, of Baltimore; and are found to work in admirable order, requiring no repairs during a protracted cruise of more than three years. The dimensions of this steam frigate are—

Length on deck, 256 feet. Breadth of beam, 45 feet; and depth of hold, 26.5 feet. Tonnage = 2,436 tons. Average draught of water, 18.5 feet in the calculations, but was said to draw 20.5 feet on arrival at San Francisco. She has two inclined engines; diameter of cylinders, 70 inches; length of stroke, 10 feet. Diameter of paddle wheels, 31.17 feet; length of paddles, 9.5 feet; depth of same, 2 feet 10 inches; number in each wheel, 26; dip of wheel, 6 feet. Average number of revolutions, 12. Average pressure of steam, 10 pounds, cutting off at 6 feet. She has four copper boilers (back to back). Whole amount of fire surface, 8,652 square feet; grate surface, 342 square feet; ratio of fire surface to cubic foot of cylinder, 16¼ to 1; ratio of fire to grate surface, 25 to 1. Area of first flues, 82 square feet; area of second and third flues, each 52 square feet; area of chimney, 54 square feet; height of same above grate, 65 feet. Water evaporated by 1 lb. of bituminous coal, 8.4 pounds; coal per hour to a square foot of grate, 9.5 pounds.

The Susquehanna is capable of mounting an armament of sixty guns, and at present carries nine heavy eight-inch shell

guns, three on pivots, each weighing 12,000 pounds. She left Hong Kong, China, on the 4th of September, Samodi, Japan, on the 24th, and Honolulu on the 30th October, and arrived at San Francisco on the 11th November—accomplishing the *run* from Honolulu in 11½ days. Trading schooners frequently make this run in *ten* days.

The Susquehanna is barque-rigged, and in addition to her fine working engines, carries a large spread of canvas. Yet we find that her late remarkable performance (for dulness) across the North Pacific lasted for 67 days! The same passage is usually made by fair sailing vessels within 45 days, without the advantage of an engine in the frequent intervals of "calm." With a daily consumptiom of eighteen tons of coal, under canvas, this "first class steam frigate" made the run from Samodi, Japan, to Oahu, Sandwich Islands, a distance of 3,300 miles, in twenty-four days; thus averaging the slow rate of 137½ miles per day, or less than *five and three-quarter* miles per hour. It is proper to remark, that a consumption of 35 tons of coal daily is the full allowance for the fires of this vessel. But the Susquehanna has been known to do better than this in the way of getting through the water; and we doubt not if the barnacles were removed from her bottom, she would yet attain *six and one-half miles an hour*, as she did on her trial trip four years ago, or sail over *eight miles an hour,* under steam and canvas united, as has once happened upon an extraordinary occasion!

We presume it is proper to hope that the next U. S. Steam Frigate which makes the above passage, will vastly improve upon the performance of the *Susquehanna.* It is certain, that however well such steam vessels may be adapted to the spirit of *naval* enterprise, they are utterly beneath the esteem of public opinion in their performances. Commercial men will expect the very first mail and passenger steamer which shall be put on the route from San Francisco to Hong Kong, to accomplish the passage in *eighteen or twenty days*, and very often to bring the time down to sixteen days. A line of steamships which should fail to reach this mark in speed would disappoint the age. When shall our naval constructors be able to overtake the *models* of private builders?

For the Nautical Magazine.

PARTICULARS AND PERFORMANCES OF THE STEAMER NORTH CAROLINA.

BY J. VAUGHAN MERRICK.

Philadelphia.—Hull built by Vaughn & Fisher; machinery by Merrick & Sons; owner, Alexander Heron, Jr. Intended service, Philadelphia to Wilmington, North Carolina.

Hull.—Single-decked, with poop cabin.

Length for tonnage,	172 feet.
Length on deck,	176 "
" deep load-water line,	170 "
Greatest breadth at deep load-line,	33 " 4 inches.
" " main wales,	32 " 2 "
Depth of hold,	12 " 4 "
Length of engine and boiler space,	34 "
Draught of water at deep load-line,	10 "
Tonnage, custom-house,	672
Area of immersed section at 10 ft. draught,	274 square feet.
Exponent midships,	0.91
Displacement,	920 tons.
Exponent of capacity,	0.64
Stowage capacity,	781 "
Contents of bunkers in tons of coal,	90

Masts and rig:—Three masts; foremast square rigged.

Engine.—One—vertical-square.

Diameter of cylinder,	56 inches.
Length of stroke,	4 feet.
Maximum pressure of steam in pounds,	25
Cut-off,	variable from ⅓ to ¾.

Maximum revolutions per minute, 29 to 30 of engine.
Gearing, 1 to 2⅔, giving 77⅓ to 80 of propeller.

Boilers.—Two—return tubular.

Length of boilers,	13 feet, 3 inches.
Breadth "	9 " 7 "
Height " exclusive of steam drum,	10 "
Height " inclusive " "	19 "
Number of furnaces, in all,	8
Breadth of furnaces,	1 " 9 "
Length of grate bars,	7 " 3 "

Number of flues or tubes, in all, ...324	
Internal diameter of flues or tubes, ...	3 inches.
Length of flues or tubes,.........................	8 feet 3 "
Heating surface, in all, 3,010 square feet.	
Diameter of smoke-pipe, ...	4 " 11 "
Height " 54 feet above grate.	
Description of coal—anthracite.	
Draught—natural.	
Consumption of coal per hour—1,500 lbs., estimated.	

PROPELLER.—True screw, of cast iron.

Diameter,.......................................	9 feet, 3 inches.
Length,...	2 " 9 "
Pitch,...	16 " 6 "
Number of blades, ...3	

REMARKS.—This vessel was modelled by John W. Griffiths, Esq., Marine Architect and Ship-builder, and possesses the largest freighting capacity of any steamer of equal tonnage in the United States marine. The peculiar feature in her model consists in the equality of her absolute resistance on the two ends of the vessel, a feature. too often lost sight of in modelling vessels intended for screw propulsion. She was intended for the freighting business, of very light draught of water, and with 350 tons of dead weight in addition to her coal for six days' steaming, she will draw but 10 feet water on an even keel.

The base-line rises for 75 feet from forward perpendicular; as a consequence, her draught is 3 feet less forward than at the midship section, or even by the marks. The objects of this rise or inclination are twofold :—But mainly, that the vessel may be kept in such trim as brings the shaft parallel to the line of flotation—a trim that should always be maintained in vessels using screw propulsion, but which is seldom cared for.

The engine is a vertical square, condensing engine, having its cross-head overhead, and two side-rods attached to crank-pins in the driving spur-wheels, the crank-shaft being beneath the cylinder bottom. On the opposite side of the propeller shaft is a tubular condenser ; the main and fresh water air-pumps, and other pumps, are outside of it, worked by boiler plate side levers, attached by links to the cylinder cross-head. The valves are equilibrium poppets, with Allen & Wells' adjustable cut-off on steam side. The gearing is of iron, with shrouding

to the pitch-line; wheels, 6 ft. 4 ins. diameter, and 2 ft. $8\frac{1}{2}$ ins. diameter of pinion; 10 ins. face of teeth on each set.

On the trial trip, the propeller was not nearly submerged, being 1 ft. 7 inches out of water; draught aft, 8 ft. 2 inches; draught forward, 7 ft. 7 ins. Bunkers filled, but no freight in. The boilers made abundance of steam for 29 revolutions of the engine, while indicator cards showed an initial pressure in the cylinder of 25 to 26 lbs., cut-off at 3 feet, or $\frac{3}{4}$ stroke.

On the first trip of the ship, her performance down the river, as far as Newcastle, was noted, and is given below; owing to the floating ice in the river, the ship was not driven, a pressure of 21 pounds only being maintained in the boilers, cut-off at 18 inches, or $\frac{3}{8}$ths of the stroke only. From the speed then attained, (10 miles per hour,) it is probable that at least $11\frac{1}{2}$ miles per hour may be obtained with *full steam pressure*, in still water.

PERFORMANCE ON FIRST TRIP.

Draught of water aft, 10 feet; forward, 8 feet, 6 inches; with 150 tons freight, besides 90 tons of coal in the bunks.

Passed	Time.		Whole distance.		Registered revolutions.		Revolutions per mile.		Steam.	Vacuum.	Cut-off in Ins.
	H's.	Running.	Apparent.	Actual.	Whole.	Net.	Engine.	Propeller.			
Navy Yard....	10.20				477				14		18
Chester.......	12.	1.40	16.50	17.00	2,870	2,393	140.8	375.4	20	$26\frac{1}{2}$	18
Marcus Hook	12.55				3,853				21	$26\frac{1}{2}$	18
Newcastle.....	2.45	1.50	14.50	18.50	6,000	2,747	152.5	406.7	21	$26\frac{1}{2}$	18
Means.							146.6	391.5			

The actual distance is known by applying a correction for tide, which was adverse except for about four miles.

The particulars from Chester to Marcus Hook are not noted, owing to time, &c., lost in landing a passenger.

The average revolutions per mile run by the ship were, $391\frac{1}{2}$ of the propeller, equal to its advance through $391\frac{1}{2} \times 16\frac{1}{2} =$ 6,459 feet.

The slip was, therefore, $6459 - 5820 = 1179$ feet $= 18\frac{1}{4}$ per cent. The average revolutions per minute, with 19 pounds of steam, cutting off at $\frac{3}{8}$ths stroke, from Navy Yard to Chester,

pending struggle, although no one regrets that overbearing, boasting England has got a few sound boxes on the ear. The Court party, as a matter of course, sides with Russia. Prussia can certainly stand longer aloof from coaxing and threats than Austria. She has nothing to gain nor lose. Her subjects are not composed of some dozens of elements, as are those of Austria, therefore she need not fear the Western Powers. She can have no desire to enlarge her territory by taking a piece from Russia, since it would prove too expensive to keep. As things now stand, *Austria will have to fight.* The Western powers can revolutionize her subjects, if she declares againt them, but put a new *rag* on her coat, if she will help them to get it. Fear and hope will finally incline her to join France and England. It is not unlikely that, in the end, Russia, getting desperate, may even successfully defy England, France and Austria, united. Then will be the time for Prussia to step forth and decide the question—we hope in the right way.

In Prussia we have a school for ship-building, as, in fact, we have a school for everything. This school has been in existence for nearly fifteen years and it gradually begins to make its influence appear in the construction of ships. Some twenty years ago, ship-building had fallen so low that no man of refined mind would degrade himself by entering the profession. Upon the establishment of the ship-builder's school, young men of good education attended it, and, after a term of tuition, became ship-builders. But there was one great drawback joined to the beneficial influence of this institution; it made learned, but not *practical*, mechanics. Youths attended this school and became ship-builders without having attained any degree of practical knowledge. They were *gentlemen* ship-builders before they had been ship-building gentlemen. The consequence was an entire failure in the case of the earlier students. The later members profited by their example, more or less, and we now have some pretty good ship-builders started into life. But what a blank prospect has opened before them! Their predecessors had done very bad, but *cheap* work, and they were expected to do good work at equally cheap rates, and have had to pay higher wages and greater prices for materials. To make the merchant believe that *good* work is worth its cost is found pretty difficult, especially where—as here—the merchants are poor. Thus may even the good thing, *genius*, and a scientific business education, be appreciated as useless, when the whole affair is viewed by a superficial glance; but time will set all things at rights, and if enlarged obstacles prevent a rapid progress, surely a slow one will go on in this age of steam and electric wires.

It appears that our merchants have got it into their heads to introduce, perforce, the build of iron vessels. We Germans generally suffer for our want of self-confidence. We are able to think, and frequently do think, too much; but we are afraid to *follow out* our own convictions. You perceive the consequence not only in politics, but in business, and other matters. In

this respect, with regard to iron ship-building, our merchants look upon the example of England, but they forget to draw a proper account of the natural wants of the two countries. England has cheap iron and coal, and dear timber. We, on the other hand, have cheap *timber*, and dear iron and coal. Now, in your country, you would hardly believe that our ship-builders in wood do so much neglect their own interests, and that of the community, as not publicly to explain the matter. They grumble internally.

However, something new here is going to be started, which may be of interest to you. An iron steamer is building, to be propelled by expelling water out at the *sides* of the vessel. The machine consists of a centrifugal pump, seven feet in diameter, with curved blades keyed on to the lower end of the crank-shaft. It revolves horizontally in a water-tight wheel chamber, into which the water from the sea flows along a covered passage, or water chamber, through crescent-shaped openings in the bottom of the hull. By these means, water is expelled laterally from the fan-wheel, in two continuous streams, by curved pipes, with nozzles, 10 inches diameter, through the sides of the vessel.

The nozzles work in collars, fixed to the sides, and can be pointed forward or backward, as it may be desired to move the vessel; or they can be directed downwards, which will keep her at rest, while the engines need not be stopped or retarded. This arrangement will even allow of dispensing with the rudder altogether. Such a vessel has already been running on the Frith of Forth, in Scotland, and achieved a speed of 9.35 miles per hour. This speed is low, but may be improved.

I need not point out the advantages or disadvantages of this mode of propulsion, as they will be plain to every machinist. The problem to be solved is this: Is the power of the engine more economically applied through this apparatus than to a paddle-wheel or screw? I rather doubt it. Some experiments have been made in London upon the propelling power of a stream of water, and they must have proved satisfactory to their authors, since they are going to build a floating fire engine, propelled in this manner.

The Prussian Navy now consists of a frigate of 44 guns; a sloop-of-war of 12 guns; a transport supply ship of 6 guns; one schooner of 4 guns; some 40 gun-boats; a paddle wheel sloop-of-war, of 10 guns and 400 H. P.; two paddle-wheel gun-boats of 6 guns each, and 150 H. P.; and one receiving ship. This small fleet is shortly to be increased by a screw sloop-of-war of 21 guns, and a screw frigate of 41 guns; which vessels are now in course of construction at the port of Dantzic. By-and-by, two more vessels of the same description are to be built. Those two iron paddle-wheel gun-boats above mentioned, namely, *Nix* and *Salamander*, are going to be exchanged with the British for the English frigate *Thetis*, of 38 guns. These steam gun-boats were built for the Prussian Government, at the private yard of Scott Russel, of London, some four years ago. Their efficiency

in *shallow waters* caused the British Admiralty to desire this exchange, clearly indicating that *private* enterprise is always in advance of official.

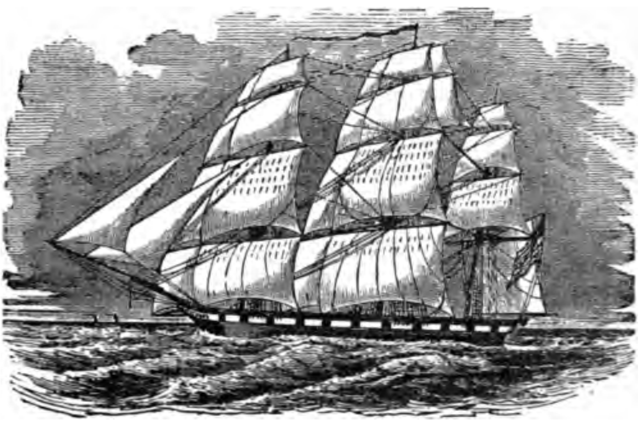
This arming of the Prussian Government at sea is of no benefit to it, and of no detriment to others, however, inasmuch as we have no United Germany. The sea-shore of Prussia is exclusively confined to the Baltic, and as this sea has but three outlets, which are very narrow, and commanded by Danish batteries, the Prussian fleet in the Baltic is allowed to enter the high seas, or not, just as Denmark lists. To remove this disadvantage partly, the Prussian Government has bought a small piece of land outside of the Baltic—the Tade-busen—where a naval port is going to be constructed. But it is evident, that as long as Denmark commands the outlets of the Baltic, these two divisions of our fleet may easily be kept separated, just as the Baltic and Black Sea fleets of Russia now are. Still, this arming at sea of Prussia is in the interest of the German nation. If ever the various German States become united in future, the keels of a powerful navy will be immediately laid, after the most approved models.

H. A. G.

THE GRAND JURY OF NEW-YORK UPON SAFE NAVIGATION.—The remarkable acumen of this august body has been fully disclosed in their recent presentment in the case of the *Arctic*, *New Era*, and other matters, which have been under their consideration during an 80 days' session. The comments of the press have been numerous and severe, in correcting the blunders and errors contained in their report, which manifests a most singular degree of ignorance, even upon the topics it was called to investigate. We have only to do concerning that portion of the presentment which undertakes to point out remedies for such cases of disaster as that of the *Arctic;* and which a jury of *Chinese* could have vastly improved! Why did they not recommend the life-boat principle of construction for steamers, and thus strike at the root of such disasters? Did they not know how the Vesta came to be saved? It has long been the universal custom of the Chinese to divide the holds of their vessels into a dozen or less distinct compartments, with strong plank. The seams are calked with a cement, composed of lime, oil, and the scrapings of bamboo. This calking renders them water tight, and is, moreover, incombustible. Hence, their junks may strike a rock and yet not sink, or have any occasion for "*life-boats*," to carry passengers "*inside and out.*" With our superior knowledge, and having plate iron at hand, are we to manifest less acuteness of inventive intellect than the "celestial" barbarians of Asia? Shame on such paucity of talent!

Let the reader refer to the January number of the NAUTICAL MAGAZINE, for the means which we propose to render the ship itself a *life-boat.*

Nautical Department.



VOYAGE OF THE CLIPPER SHIP SHOOTING STAR, OF BOSTON,

W. E. KINGMAN, MASTER, FROM NEW-YORK TO CHINA AND BACK.

To the able and accomplished commander of the fine clipper ship *Shooting Star*, we are indebted for the following abstract of the log, and particulars of this most successful voyage, which has been accomplished in the brief space of eight months and ten days.

On the 25th of April, 1854, the *Shooting Star* left New-York for Hong Kong, where she arrived after a fine passage of 107 days. In 38 days thereafter she was ready for sea; and, on the 19th of September, sailed from Whampoa for New-York, again accomplishing the passage in 107 days.

It was the good fortune of Capt. Kingman to observe one of the most singular phenomena which mariners have ever beheld in the sea, and which has received the common appellation of "white water." It will be seen, in the following account of this wonderful appearance, which is furnished by Capt. Kingman, that the magnitude and grandeur greatly surpassed anything of the kind ever before observed by navigators. This patch of "white water" was discovered near Sunda Straits, about latitude 8°, longitude 105° from Greenwich; and a sample

was preserved, to be sent to the National Observatory, at Washington. Capt. Kingman writes as follows to Lieut. Maury :—

Thursday, July 27th, 1854, at 7.45 P. M., my attention was called to notice the color of the water, which was rapidly growing white. Knowing that we were in a much frequented part of the ocean, and having never heard of such an appearance being observed before in this vicinity, I could not account for it. I immediately hove the ship to, and cast the lead; had no bottom at sixty fathoms. I then kept on our course; tried the water by thermometer, and found it to be $78\frac{1}{2}°$, the same as at 8 A. M.

We filled a tub, containing some 60 gallons, with the water, and found that it was filled with small luminous particles, which, when stirred, presented a most remarkable appearance. The whole tub seemed to be alive with worms and insects, and looked like a grand display of rockets and serpents, seen at a great distance in a dark night. Some of the serpents appeared to be six inches in length, and very luminous. We caught, and could feel them in our hands, and they would emit light until brought within a few feet of a lamp; when, upon looking to see what we had, behold, nothing was visible; but, by the aid of a sextant's magnifier, we could plainly see a jelly-like substance, without color. At last, a specimen was obtained of about two inches in length, and plainly visible to the naked eye. It was about the size of a large hair, and tapered at the ends. By bringing one end within about one-fourth of an inch of a lighted lamp, the flame was attracted towards it, and burned with a red light. The substance crisped, in burning, something like a hair, and appeared of a red heat before being consumed. In a glass of the water there were several small round substances, (say 1-16 of an inch in diameter,) which had the power of expanding to more than twice their ordinary size, and then contracting again. When expanded, the outer rim appeared like a circular saw, only that the teeth pointed towards the centre.

This patch of white water was about twenty-three miles in length, north and south, divided near its centre by an irregular strip of dark water, half a mile wide; its east and west extent I can say nothing about. I have seen what is called white water in about all the known oceans and seas in the world, but nothing that would compare with this in extent, or whiteness; although we were going at the rate of nine knots, the ship made no noise either at the bow or stern. The whole appearance of the ocean was like a plain covered with snow; there was scarce a cloud in the heavens, yet the sky, for about ten degrees above the horizon, appeared as black as if a storm was raging; the stars of the first magnitude shone with a feeble light, and the "milky way" of the heavens was almost entirely eclipsed by that through which we were sailing. The scene was one of awful grandeur, the sea having turned to phosphorus; and the heavens being hung in blackness, and the stars going out, seemed to indicate that all nature was prepar-

ing for that last grand conflagration, which we are taught to believe is to annihilate this material world.

After passing through the patch we noticed that the sky, for four or five degrees above the horizon, was considerably illuminated, something like a faint Aurora Borealis. We soon passed out of sight of this phenomenon, and had a fine night, without any conflagration, (except of midnight oil, in trying to find out *what* was in the water.)

I send you this description, because I believe you request your corps of "*one thousand assistants*" to furnish you with all such items, and I trust it will be acceptable; but as for its furnishing you with much, if any, information relative to the insects or animals that inhabit the mighty deep, time will only tell—I cannot think it will.

At all events, I remain
Your obedient servant,
W. E. Kingman,
Com. Ship Shooting Star, of Boston.

ABSTRACT OF LOG OF SHIP SHOOTING STAR.

NEW-YORK TO HONG KONG.

Date.	Course.	Dist.	Lat.	Lon.	Winds.	Remarks.
April 25					W. S. S.	April 25, civil time; 8 A M. left outer buoy.
26	E. ¾ S	208	39 56	69 30	S	Squally & fresh, light'ng
27	E ¼ S	270	39 43	63 48	S. W.	Moderate and hazy.
28	E. ½ N	223	40 04	58 59	S. E. by S.	Light winds and rainy.
29	E. N. E	36	40 20	58 13	S. E. by E.	Light baffling winds.
30	S. by E.	197	37 04	57 50	E. by S.	Fresh breezes, fine, hazy.
May 1	S. S. E	197	34 04	56 15	E.	Fresh to moderate winds.
2	N. E	123	35 39	54 45	S. E. by E.	Moderate breezes, rainy.
3	N. E.	173	37 49	52 35	S. E	Fresh and squally, rain.
4	E. by N	113	38 22	50 18	S	Light winds and fine.
5	E. by N	138	39 02	47 28	S. S. E.	Mod., light baffling winds.
6	E. ¾ N.	167	39 22	43 54	S. by E.	Mod., fresh, rain squalls.
7	E. by N	232	40 27	39 04	S. by W.	Fresh breezes; have had a long spell of southerly winds; but little change in wind or weather for 10 days.
8	E.	241	40 24	33 50	S. by W	Light breezes throughout.
9	S. E. by S. ¾ S.	21	40 06	33 36	S. S. W.	Light baffling winds, fine weather.
10	S. W. by W.	94	39 17	35 19	S.	Ditto; 12 days' head wind in succession.
11	S. S. E.	32	39 02	34 43	S.	Ditto; made nothing.
12	S. by W.	40	38 23	34 30	S. E.	Ditto; fine prospect for a long passage; fine weather.
13	S.	207	34 57	34 33	S. E. by E.	Light winds & moderate: first time on our course for 14 days.
14	S	193	31 44	34 30	E	Light baffling winds and rainy.

Date.	Course.	Dist.	Lat.	Lon.	Winds.	Remarks.
May 15	S. E.	73	30 49	33 32	S. S. W.	Light and moderate with rain squalls; on a bad track this time.*
16	S. E. by E.	215	29 14	29 49	S. S. W.	Moderate and fine.
17	S. W.	103	28 04	31 14	S. by W.	Light and fine, heavy swell W. N. W.
18	S. W. ½ S.	48	27 27	31 48	S. by W.	Light unsteady breezes.
19	S. S. W.	149	25 20	33 15	S. E. by S.	Light baffling winds, fine weather.
20	S. ¾ E	211	21 50	32 45	E. S. E.	Mod., fine trade weather.
21	S. by E.	238	18 00	31 50	E. S. E.	Fresh to mod., cloudy.
22	S. S. E.	265	13 56	31 03	E. by S.	Moderate and fine; hazy.
23	S. by E.	203	10 42	30 04	E. by S.	Mod. and light breezes; meteors falling towards the west.
		4,410 miles.				
24	S. by W.	200	7 36	28 56	E.	Light winds and rainy.
25	S. by W.	131	5 28	28 30	N. E. Baf.	Light baffling airs.
26	S.	68	4 20	28 30	All points	Ditto; rain and calms.
27	S. S. E.	87	3 03	27 51	N. N. E.	Light baffling airs and breezes.
28	S. by W.	60	2 05	28 04	W. S. W.	Light breeze from W. S. W., rainy
29	S. by W.	27	1 40	28 10		Calms, light airs, rainy.
30	S. W. by S.	84	0 30 N.	28 57		Light and moderate, with rain squalls; crossed the line in lon. 29°; have sailed, per log, 5,500 miles, and per observations from noon to noon, 5,100 miles—a very long track. Last year I sailed from N. Y. 10 days earlier, and crossed the line, in 31°, in 25 days, sailing 4,100 miles.
31	S. ¾ W.	167	2 15 S.	29 19	S. E.	Moderate and fine, rainy.
June 1	S. S. W.	199	5 14	30 46	S. S. E.	Unsteady, squally, rainy.
2	S. W. ¾ S.	182	7 37	32 40	S. S. E.	Mod. fresh and squally.
3	S. W.	165	9 31	34 40	S. S. E.	Mod. light and squally.
4	S. ¾ W.	79	10 49	34 50	E. S. E.	Mod. light, fine weather.
5	S. W.	106	12 31	35 20	S. E.	Light and fine, squally with rain.
6	S. W.	117	14 02	36 34	S. S. E.	Mod. and light; this passage beats all for light head winds.
7	S. W. ½ S.	137	15 48	38 00	S. E. by S.	Mod., hard squalls, fresh.
8	S. ½ E.	73	17 00	37 56	S. E.	Mod., squally, fresh and variable.
9	S. by E.	177	19 51	37 12	E.	Fresh and fine; lost a man overboard; exch'd signals Staghound, 2 days after us for Cala.
10	S. E.	132	22 24	35 31	N. N. E.	Fresh, thunder, lightning and rain.

* I once went from Boston to Madeira in 18 days, in a brig that could sail only about half as fast as this ship; sailed from B. 10th May. Here we are 20 days out, and about as near *nowhere* as it is possible to get. I don't like our track at all, but do not see where I could have improved it much without first knowing that the wind was going to hang to the southward 18 days on a stretch, as it did; had I known that, I might have done better, perhaps. I think ours is a very uncommon case, thus far.

Date.	Course.	Dist.	Lat.	Lon.	Winds.	Remarks.
June 11	S. E.	90	23 19	34 14	N. W.	Light and fine.
12	E. S. E	189	24 30	31 02	S. by W.	Fresh and squally; carried away fore-topsail yard.
13	E S. ¼ S.	172	25 10	27 58	S. S. W.	Fresh with squalls of rain.
14	E. ½ S.	223	25 31	23 52	S. by W.	F'sh gales, heavy squa's.*
15	E. ¼ S.	190	25 19	20 27	S.	Fresh gales and high sea.
16	S. E. by E.	92	24 33	19 00	S. S. E.	Light baffling breezes.
17	S. W. by W.	46	25 11	19 30	N. E.	Ditto.
18	S. E. by E.	194	26 57	16 24	S. by W.	Mod. and light breezes.
19	S. E. by E.	120	28 01	14 29	S. S. W.	Mod. and fine.
20	S. E. by E.	220	29 50	10 51	S. W. by S.	Mod with rain squalls.
21	S. E. ½ E.	186	31 45	8 06	N. N. W.	Mod. and squally.
22	E. ¼ S.	180	31 52	4 34	S.	Mod, light and cloudy.
23	E.	80	31 57	3 00	E N. E.	Light, unsteady breezes.
24	S. E.	166	33 52	0 37W	N. N. W.	Ditto; fine.
25	S. E. by E.	253	36 02	3 48E	N. W.	Fresh and rainy.
26	E. by S.	204	36 47	7 57	W.	Moderate and fine.
27	E. by S.	158	37 24	11 10	N. W.	Mod. and light winds.
28	E. by S.	195	38 10	15 10	N. W.	Mod. to fresh, rain squa's.
29	E. by S.	196	38 50	19 14	N. W.	Mod. and fine weather; *distance, by observation, from New-York, 9,786 miles*, equal to 150 mil's per day made good—log distance, about 500 miles more.
30	E. ½ S.	205	39 11	23 37	N. W.	Mod., heavy dew falling 8 P.M.
July 1	E. by S.	179	39 42	27 21	N. N. E.	Light breezes and fine.
2	E. ½ S.	280	40 18	33 24	N. N. E.	Mod and fresh, easterly current.
3	E. ½ S.	278	40 41	39 27	N. by E.	Fresh breeze, no current; distance sailed in 48 hours, 551 miles, royals set.
4	E. ½ S.	285	41 03	45 40	N	F'sh, thick weather, light.
5	E. ½ S.	165	41 15	49 17	N	Fresh, light and calm.
6					E. S. E.	Mod. fresh, strong gale. Where are the "brave west winds," supposed to blow so constant hereabouts?
7	S. by E.	167	43 53	50 10	S. E. by S	Strong gales, rain & hail.
8	N. E.	141	42 10	52 21	S. E	Strong gales and cloudy.†
9	N. E.	236	39 15	55 56	S. E.	Moderate winds.
10	E. by N	105	38 45	58 05	S. W. by W.	Light airs and breezes.
11	E. ¼ N.	272	38 28	63 48	S	Fresh breezes and fine.
12	E. ¾ N.	252	37 54	68 59	S. S. W.	Mod. and fresh, with rain.
13	E.	246	37 54	74 12	W.	Mod. with rain squalls.
14	E	177	37 56	77 57	W. N. W.	Mod., Amsterdam Island.
15	E. ½ N.	233	37 39	82 51	S. W	Mod. with rain squalls.
16	E. by N.	124	37 15	85 27	W.	Light, baffling and mod.

* No fore-top-sail yard aloft—obliged to cut down a main.

† I will put this day's work against that of any other ship afloat, under the same canvas, viz.: Six hours under three close-reefed top-sails, reefed fore-sail, and storm F. T. M. stay-sail and main spencer; and eighteen hours under the same canvas, and single reefed main-sail and reefed main-top-mast stay-sail. Average for the whole time, six knots, and not one point lee-way. Braced *sharp* up all the whole time.

Date.		Course.	Dist.	Lat.	Lon.	Winds.	Remarks.
July	17	E. N. E.	187	36 06	89 04	S. W.	Mod. & fresh, light rains.
	18	E. N. E.	265	34 34	94 08	S. S. W.	Cloudy weather.
	19	E. by E.	235	32 54	98 23	W. S. W.	Moderate breeze.
	20	N. E. ¾ N.	193	30 31	100 50	S. W.	Mod. and light breezes.
	21	N. E.	194	29 29		N. W.	Light, baffling breezes.
	22	N. E.	191	28 18	103 28	N. by E.	Ditto; saw a whale.
	23	N. E. by E.	175	26 39	106 11	N. N. W.	Mod., light baffling winds.
	24	N.	163	23 56	106 14	E. S. E.	Ditto.
	25	N. ¼ E.	216	20 26	106 29	E. S. E.	Ditto; light squalls, rain.
	26	N. ½ W.	233	16 34	106 05	E.	Moderate, ditto.
	27	N. ¼ W.	227	12 47	105 55	E.	Moderate and fine; saw "white water."
	28	N. ½ W.	241	8 46	105 30	E.	Fresh breezes and fine.
	29		14,650	Sunda Straits		S. E.	Mod. and light; 11 P. M. made Java Head; hove to till daylight, and pass'd through Prince's Channel; 7 P. M. anchored at Anger.
		(94 days; average per day, 156 miles.)					
	30					N. W.	Anchored at Anger; 2 P. M. weighed anchor.
	31					Calm	Light airs; Lynn Shoal S. 2 miles.
Aug.	1			3 16	107 00	S. E.	Mod. and fine; *saw wreck.*
	2			25 N.	107 02	S. S. E.	Mod., light; hot weather.
	3			2 37	107 16	S.	Light breeze and fine.
	4			3 44	107 04	S.	Light & hazy, lightning.
	5			5 26	107 10	S.	Light and fine.
	6			7 20	108 12	S. W.	Ditto; hot weather.
	7			9 50	110 00	S. W. by S.	Mod. with rain squalls.
	8			13 01	112 33	S. W.	Mod. and fresh, fine.
	9			16 19	113 22	S. W.	Moderate and fine.
	10			19 18	113 49	N. W.	Light baffling winds.
	11					N. W.	7 A. M. took a Hong Kong pilot; 11 A. M. anchored at Hong Kong—a typhoon blowing outside. Passage, 107 days.

CLIPPER ARRIVALS—AN EVEN RACE.—The clipper ships *Celestial* and *Sting Ray* arrived, recently, at San Francisco, from New-York, in one hundred and thirty days each, both having cleared from New-York on the same day. The Celestial is a well known clipper, commanded by Capt. Palmer, and comes consigned to Messrs. Hussey, Bond & Hale. The Sting Ray is a new vessel, on her first trip; is commanded by Capt. Kremly, and consigned to Messrs. Lowe, Bicketts & Co.—*Cal. Ex.*

SUBMARINE VOLCANO.—Capt. Patterson, of the ship Magnolia, arrived from Callao, states that on the 7th of November, in lat. 42 32 South, lon. 88 45 West, he experienced a severe shock of a submarine volcano, causing the ship to appear as if running over a coral reef. So great was the shock that those below ran on deck, supposing the vessel to be ashore.

PORTS AND HARBORS OF JAPAN.

(*Continued from page* 191.)

Oonting, or Port Melville, Island Great Lewchew.—This harbor is on the N. W. side of Lewchew, and distant about thirty-five miles from Napha. Sugar Loaf Island, an excellent land-mark, lies about twelve miles to the W. N. westward of the entrance. The Island is low and flat, with the exception of a sharp conical peak near its eastern extremity. Passing to the northward of Sugar Loaf Island, an E. S. easterly course will bring you to the mouth of the harbor, and to the north and westward of Kooi Island. Here you will heave-to or anchor in 25 fathoms water, until buoys can be placed along the edges of the reefs bordering the channel, for it is difficult for a vessel of large draught to find her way in between the reefs, which contract the channel to a cable's length, and are at all times covered with water. The ranges and courses for the channel—first, Hele Rock, in range with Double-topped Mountain, bearing S. 37 degrees E. Steer this course until Chimney Rock bears S. ¼ E.; then for Chimney Rock until Point Conde bears S. 49 degrees E.; then for Point Conde until entering the basin of Oonting, when anchor, giving room to swing clear. The holding ground is good, land-locked and sheltered from every wind. Good water is to be had at the village of Oonting.

Lloyd's Harbor, Bonin Islands.—The entrance of Port Lloyd, on the western side of Peel Island, one of the Bonin group, is well defined. A ship bound in would do well to place a boat on the shoal off the E. point of Square Rock, so called on Beechy's Harbor Chart. This shoal can be seen from aloft, however, even when there is no swell on. It extends full two cables length from Square Rock to the South, and is steep; the centre is a wash, with a smooth sea. The tide rises about three feet, and there is a coral rock about one cable's length N. from the north point of Southern Head, on which is *eight feet water*. But a ship entering the harbor would not be likely to approach Southern Head so near as to be upon it. The Bonin Islands are chiefly visited by whale ships, inasmuch as their products suit their wants. Vegetables and fruits of various kinds, together with wild hogs and goats, can be had of the few whites and Sandwich Islanders—35 in all—settled there. Wood is good and plentiful, and water can be had in limited quantities, slightly tainted by the coral rocks. The anchorage is fair, though open to the South and West. Beechy's Chart is accurate.

Mr. Bennett, acting Master of the Susquehanna, says in his report to Commodore Perry:—"Assuming the position of Napha, in Great Lewchew Island, as established by Beechy, to be correct, I find, by the mean of my chronometers, that he has placed Ten Fathom Hole, in Port Lloyd, five miles too far to the westward, and consequently the whole group is placed that much to the westward of its true position."

Silas Bent, *Lieutenant U. S. Navy.*

By order of Commodore M. C. Perry. Japan, *May* 27, 1854.

For the Nautical Magazine.

DOCK RAMBLES OF A NAUTICAL MECHANIC.

Ho!—Kind and condescending reader, your friendship for an hour, and we will ramble down along the docks, on East or North River, glancing at the shipping in slip or stream, with a critico-genial eye. Come along, we say, and our scene shall be laid in New-York; for this port gives shelter and commerce to the marine of every nation, and affords the widest scope for the investigation of the nautical connoisseur, whose curiosity is gratified by rambles such as we propose.

For the lover of marine architecture, whether mechanical or nautical, the slips of a great commercial city collect a magnificent museum, or cabinet of art; and he must be a dull observer, who cannot gather a valuable store of information from the silent, but impressive monuments, of the masters' skill. Perverse, indeed, must be the obstinate gazer at ships, who will not learn to appreciate the firm strokes of nautical *genius*, in contrast, close and provoking, with the clumsy memorials of the wood-butcher's *penchant*.

Behold the harbor, and close nestling to the shore, stowed away securely in snug berths, yards cockbilled or braced sharp, jib-booms in-rigged, sails unbent, and gangways down—see the fleets of busy commerce.

Let us freshen our way down to the docks, and run over the bewitching forms, rigs, and cuts, that have haunted us from boyhood, and still enchant our spell-bound fancy in leisure hours. How many delightful rambles through the forests of hulls and spars have we enjoyed, renewing them with fresh delight when each new fleet arrived! How soon the wharves, and slips, and the very spiles to which the thing of life was moored, become familiar! And when some slow-lading ship moves off to sea, we miss her as an old acquaintance. We have never seen a fine, well-appointed ship, which we did not long to take a voyage in; nor have we ever seen a handsome, well-modelled one upon the stocks, which we did not desire to work upon, and finish for her bridal-day, when

> "All goes merry as a marriage bell,
> And she 'feels the thrill of life along her keel,'"

at the joyous "*launching.*"

We well remember, when plying our trade on the banks of the Ohio River, where nothing of shipping could be seen but *smoke-pipes* and *wheel-houses*, we grew weary of our job, and sighed for another glance at our favorite *masted* craft. We stacked our tools, and after a passage of seventeen mortal days, thirteen of which were spent in "riding" from Louisville to Cairo, upon a *puffing* steamer, landed on the levee of New-Orleans, grateful for the prospect of looking out upon *salt water*, and finding tiers of ships for miles an end—the objects of romantic worship.

But what have we here? A great black clump—a perfect drifter—one of old Noah's boats, which some sacrilegious wretch has clipped the corners off! It would require three trials to mount a sea—the thing is so intractable—it would creep up part way, and slide back for a fresh start. It is all up in a heap, like a shivering sleeper in a cold winter night, and has a decided preponderance of the lymphatic temperament, distinguished for the distension of the abdominal regions. But she has merit, you think—"a great hold on the water"—yes, and the rule works both ways—it has a great hold on her. Besides, she has more than half as much hull as canvas above water. "A nice, dry ship," you think; not quite so *dry*, for she works like a saw-mill, or a gold-washer—up and down, over and over, to dip up the ocean on her decks.

Ah! here we have one of the "regular" packets—black-ball or swallow-tail, no matter which. A fine, large ship—square-built, signifying, in physiognomy, strength and endurance—one that will make elbow-room in the crowded docks of Liverpool, and do no discredit to her Yankee architects. These packets were among the earliest of American achievements in the extension of commerce, and, at the time of their projection, were superior in dimensions, model and workmanship, to any other class of shipping afloat in the commercial world.

The various lines of European packets have long constituted the passenger boats of the Atlantic, and the peoples of many States have crossed on their steerage decks. Their huge sides loom up like fortress walls; their ends are full, they have three decks and a poop reaching one-third of the length, and are ship-

rigged, with royals well aloft. Though built for burdensome freighting ships, many of them sail remarkably well.

But here we come to a clipper—a genuine East Indiaman, or Californian, clean, long, and smooth as a *smelt.* A sharp, arching head, thin, hollow bow, convex sides, light, round, and graceful stern, defines the hull. Aloft, large built, iron-banded masts, taunt, tapering smaller masts, long-proportioned spars, from lower to skysail yards, complete the outline. Above-board she towers up with strong, fibrous arms, spreading a cloud of canvas to the gale. Being widened and lengthened in dimensions of hull, she rides the glassy wave in security, or, proudly oscillating in the crazy sea, flies with life before the swift propelling gale—queen of commercial fabrics. The greatest velocity yet attained upon the wild ocean-course has been by canvas clippers. Success to their voyages, and we will heave ahead.

Here are our large, schooner-rigged craft, both two and three-masted. Come on board. How strangely they contrast with the deep, heavy ships lying on the other side of the dock! Many of these schooners are as long and broad as ships of double their tonnage, which, in their turn, are twice as *deep* as the schooner. Why is it that there is such disparity in dimensions, and such differences in model? Is it all the same to commercial men, whether either class of vessel is superior to the other for freighting purposes? We think not. At all events, schooners are rapidly *growing* up into ships, and taking their *dimensions* and *model* with them. It seems odd enough, at the present time, that vessels of only four or five hundred tons should ever have been thought large enough for three-mast ships, square-rigged, with yards. Equally strange does it seem, that such huge top-sides as those on yonder cumbrous hulk should ever have been built upon a bottom sufficient only for a schooner's waist.

The imagination fails to furnish an hypothesis of the particular, and joint force of circumstances, which combined to produce the dull points of the clumped ark aforesaid. What we witness now is the waning age of clumsy art, lapping upon the era of steam and science. The schooner, not less than the

steamship, indicates the accelerating march of ship-building, destined yet to reach higher and still higher planes of advancement.

We go further, and start another inquiry—Why is it that the shipping of various nations differs so radically in principal features ?—being as much unlike as the innumerable tribes of mankind, and like them, too, susceptible of classification in the scale of usefulness, intelligence and power. From the historical teachings of Time, we learn the qualities of all things, in nature or in art, and ships may be read in the same universal light. From this stand-point of physiological view, it will not be difficult to point out the floating structures of nautical mechanism which correspond, in typical development, to the superior races of the mixed human family. The executive intelligence of a commercial nation is found indelibly stamped in the features of its ships. And it is no less true than just, that the leading qualities of the *modeller* and builder, or of those who may *dictate* the model and construction, is, in like manner, found impressed upon the individual ship, in every line and lineament. Therefore, when we gaze upon the *clumps* and *clippers,* packets and schooners, of the diversified fleets of the commercial world, we fancy to ourselves each example represents that phase of human character which presided at the inauguration of its advent upon the tides of navigation. And, so long as the form and structure of the vessel shall survive the wreck of wind and waves, it bears upon its bottom the mark of mind, exhibiting to you and I, and the studious dock-walkers of every port, what manner of men were its architects and owners. A full allowance and speedy passage to you. Adieu. MIRROR.

GREAT SALE OF SHIPS.—The Liverpool and London papers give full details of the great ship sale on Thursday, December 7th, for the benefit of the creditors of Mr. Oliver, the great ship-owner. Twenty-two vessels were sold, realizing £103,050, an average of £8 15s., or $42.35 per ton. The sale was attended by leading ship-owners from all parts of the kingdom. The seventy-eight vessels owned by Mr. Oliver consist of 31 ships, 39 barques, 5 brigs, 2 brigantines, and 1 schooner, making a total of 46,271, and average of 593$\frac{1}{7}\frac{3}{8}$ tons to each vessel. The vessels sold were of the better class, and exceeded the average price.

LOSS OF STEAMER OCEAN IN BOSTON HARBOR.

A terrible disaster has occurred to the steamer Ocean in Boston Harbor. At five o'clock the Eastern steamers left that port for their various destinations, and when they had been on their passage about twenty minutes, one of their number, the steamer Ocean, Capt. Donovan, bound for Bath, was run into by the royal mail steamship Canada, Capt. Stone, on her passage to this port from Liveroool *via* Halifax. Before the Canada had separated from the Ocean, the latter steamer was on fire, and shortly burned to the water's edge.

The utmost confusion prevailed among the passengers, and in the terror and dismay numbers jumped overboard, some of whom were drowned. The Ocean had on board some 75 or 80 passengers, but the exact number is not known.

The boats of the Canada, Forest City, Boston, and Eastern State, the Quarantine boat, and other vessels in the vicinity, hastened to the rescue of the imperilled passengers, and succeeded in saving the lives of nearly all.

The Ocean was a side-wheel steamer, and was in every respect a well-appointed and substantial sea-going vessel. She was about 600 or 700 tons burthen, about four years old, and cost about $75,000. She was not insured.

The officers and crew of the Ocean were saved uninjured.

The number of persons saved is 84; known to be drowned four, or, as some suppose, five, which must make nearly the whole number on board.

The following statements of the officers of the two boats in collision, it will be seen, materially differ:—

Capt. Donovan's Statement.—Capt. Richard Donovan, master of the Ocean, furnishes a statement, of which the following is a part:—

We left our wharf at the usual hour, (5 o'clock,) and proceeded on our course for Bath, Augusta, Hallowell, and other places on the Kennebec, having on board 75 to 100 passengers: it is impossible to say with certainty just how many, as the list and all other papers were destroyed; there might have been no more than twenty-five women. At the time just before the collision, we were aware of the approach of the Canada, and knew that if she kept on her course she would inevitably strike us; but as our

lights were up, and our whistle blowing, we were confident that she saw and heard us, and would turn from her course; there were several other boats—the steamer Boston, Forest City, and Eastern State, and a ship and brig—quite near us; we were trying to pass to the right, but the Canada bore directly for us; we perceived this, and continued a southerly course.

The Forest City and Ocean were nearly side by side; perhaps the former might have been a quarter of a mile off. Finding that the Canada was fast coming upon us, and must soon strike, we hailed her as loud as possible, calling upon her to put their helm hard to port; if they had complied, we should have gone clear, and the collision could not have occurred.

CAPT. STONE'S STATEMENT.—Capt. Stone, of the Canada, has furnished the following statement in regard to the collision:

At about 5.30 P. M., the Canada, coming up the harbor, at half speed, with the tide running strong ebb, and making about four knots an hour, myself and the Boston pilot standing on the starboard paddle-box, four steamers (the Eastern State, the Ocean, the Boston, and the Forest City) hove in sight at the same time. The position of the Ocean, when we first, saw her, was rather on our starboard bow. The other steamers were on our port bow, and therefore, we could not starboard our helm. The Ocean altered her course so as to bring her directly across our bows. As soon as this movement was perceived on board the Canada our helm was put hard aport; the engine was stopped and backed; the wheels made several revolutions back before the steamers struck. Had the Ocean kept on her course instead of running directly across our bows when quite close to us, the collision would have been avoided. The speed of the Ocean did not appear to be slackened in the least.

BOSTON, *Dec.* 29, 1854.

The Board of Inspectors for the ports of Boston and Charlestown have now made a report on the above collision. They find that "*it occurred through a mistaken belief* on the part of *the pilots on the ocean*, that *they were bound to go to the right at all hazards.*" As the law justifies no mistakes, the licenses of the captain and pilots of the Ocean were revoked. The inspectors are of the opinion, "that if the Ocean had kept her course, she would have passed the Canada *at least* three hundred feet to the north." The masters and pilots of steam vessels will do well, after this, to become thoroughly conversant with the "printed rules and regulations of the Board of Inspectors, to be observed in passing vessels by night." Although two copies of these were on board the Ocean, they do not appear to have been understood.

NOTICES TO MARINERS.

DANGERS IN BOSTON HARBOR.

COAST SURVEY STATION,
NEAR CAMDEN, ME., *Nov.* 16, 1854.

Through the kindness of Commander Charles H. Davis, U. S. N., late a Hydrographic Chief in the Coast Survey, I have been furnished the positions of three very important and dangerous rocks in Boston Harbor, situated in the fair channel way, inside of Boston Light.

Commander Davis acknowledges obligations to Mr. Alfred Nash, commissioned pilot of Boston Harbor, for valuable services in this connection.

These rocks were recently discovered by vessels striking on them while in the charge of able pilots, and numbered 1, 2, 3, from the lighthouse up. They may be approximately laid down on the chart as follows :—

1. Distant seven hundred yards from Boston Light on the bearing W. 54⅓° S.
2. Distant seventeen hundred and seventy yards from Boston Light on the bearing W. 24¾° S., which will be about two hundred and forty yards from the new beacon on the Spit, in a South and East direction.
3. Distant two thousand three hundred and forty-three yards from the Boston Light on bearing W. 14¼° S., which will be about one hundred and seventeen yards beyond and above the old beacon on the Spit, in a South and West direction.

These bearings are true.

The first rock may have on it as little as 12 feet ; the second, 15 feet ; the third, 17 feet, at very low water of spring tides.

RANGES FOR AVOIDING THE ROCKS.—1. The new beacon on the Spit kept open to the North, with the hotel on Long Island, leads clear to the South of the first rock.

2. Shutting in entirely the hotel on Long Island with the North part of George's Island, leads clear to the South of the second rock.

3. Nix's Mate on the Northern edge, or, at farthest, the centre of Bunker Hill Monument, (but not on or beyond the southern edge of it,) leads clear to the South of the third rock.

If Bunker Hill Monument is not visible, the Deer Island beacon kept on the North end of Apple Island, while passing the range of the old beacon on the Spit, on the little head of the Great Brewster, will answer the same purpose.

A. D. BACHE,
U. S. Coast Survey.

POLLOCK RIP LIGHT BOAT.—The New-Bedford Mercury says that this boat, which has been undergoing repairs at that port for three or four weeks, will resume her station in a few days. She has been raised forward and aft, has been supplied with chain rigging, which is a new feature, as well as an important one ; with swinging davits of wood, whereby the boats, in heavy weather, can be easily taken in upon deck ; with new lighting apparatus, and a bell which weighs 1,000 pounds. All the light boats, by an act of Congress at its late session, are to be supplied with bells of the same weight, as well as two cannon.

CAPT. Nelson, of the Auckland, at Sydney, N. S. W., makes the following report :—

"*August* 2, 1854.—At 1, P. M., passed a small island in lat. 18 deg. 8 min. S., lon. 174 deg. 5 min. W. The island is very near triangular in shape, and about 5 miles in circumference. It is covered with cocoa-nut trees and underbrush. It is about thirty feet high ; rocky points at S. E., S. W. and N. There is a reef of two miles W. S. W. from it, whereon the sea broke furiously. The reef is a quarter of a mile long, with deep water between it and the island. This island bears S. E. ¾ E. true course from the island of Amagura. *Aug.* 5, 1854.—The two southern islands of the one group, named Elizabeth and Emma, bear E. by N. ¼ N., and W. by S. ¼ S., by compass, from each other, distant seven miles. I made

Eunice Island in lat. 21 deg. 8 min. S., lon. 178 deg. 40 min. W. Both islands are surrounded by reefs. That of Eunice has quite a large basin inside the reef, on the west side of it."

The Strangford correspondent of the London Shipping and Mercantile Gazette writes, under date of Nov. 15, as follows:—

"Notwithstanding all that has been said respecting a light on this rock, there the light-house remains, 'a real Irish light-house,' without a light in it. An awful responsibility rests with the public body who refuse to comply with the earnest wishes of the maritime public, and merchants and traders in this quarter. It is thought that, notwithstanding the crippled state the American ship Brother Jonathan was in when she got on shore on Balliquinton Point, had there been a light on the Angus Rocks, Capt. Tucker might have been able to have saved his vessel by running up our Lough."

The Lodge Light Ship (Delaware Bay) will be removed from her station for the winter, on or about the 15th inst.

Philadelphia, Dec. 9, 1854.

Coast Survey Station,
Near Camden, Me., *October* 27, 1854.

I am indebted to the Chief Engineer, Gen. Totten, for an extract from a letter of Lieut. H. G. Wright, of the Corps of Engineers, communicating the existence of a shoal spot not upon the chart, nor generally known to wreckers, in Garden Key Channel, the light-house bearing South.

This shoal has scant three fathoms of water on it, while there are six and a half and seven fathoms on each side of it.

The hydrography of the Coast Survey has not yet included this channel.

(Signed) A. D. Bache, *Superintendent.*

The Beacons at Holmes' Hole will be illuminated on or about the 5th December, 1854. The following sailing directions will explain their use and character. In entering from the Westward, give the West Chop a berth of about half a mile, until you get the white light on with the red—then run for the anchorage.

In entering from the Eastward, give the East Chop a berth of about half a mile, and you may follow it around until the white light is on with the green; but the best anchorage is near and to the Westward of that line.

The white (or leading light) on with the red (or Eastern) light, clears the rock off Low Point.

The white light on with the green, (or Western,) divides nearly the hard from the soft bottom in the outer harbor, and leads through the deepest water to the inner harbor.

Shipwrecks on the Atlantic Coast.—The Secretary of the Treasury, with a view to the prevention of shipwreck, and the relief of disabled vessels this winter, has sent orders to all the cutters on the Atlantic coast, to begin their usual winter cruise to that end.

Official notice is given, that a Buoy Boat has been placed on N. end of Bass Rip, in — fathoms water, Sankaty Head Light-house bearing (per compass) W. ½ W., distant about three miles.

There has also been one placed S. end of Great Rip, in 5¼ fathoms of water, Sankaty Head Light-house bearing (per compass) N. W. ½ W., distant about 14 miles.

Both boats are painted white, with large red letters on both sides of each; the one "Bass Rip," and the other "Great Rip."

Newburyport (Mass.) Light.—The main channel across the Bar into Newburyport having changed, so that the two lights on Plum Island no longer serve as a range for crossing in the deepest water, notice is hereby given, that to prevent strangers from being deceived, the outer light will be extinguished on the first day

of January, 1855, and the inner light (bearing W. from the Bar) only will be kept up until the necessary structures can be erected to restore the proper range for crossing the Bar, of which due public notice will be given.

A 4TH order Lens Apparatus has been placed in the Henlopen Beacon Light-house, instead of the Reflector Light, formerly in use. No change has been made in the character of the light.

OF all the Florida Keys, Indian Key may be the most readily distinguished. It is a wrecking station, and contains five or six houses, which give it the appearance of a settlement; but, with the exception of a few tall cocoa-nut trees, the Island is destitute of all vegetation.

With Indian Key bearing from N. to N. W. by N, vessels may run for it, crossing the reef in four fathoms, and gradually shoaling to three fathoms when within a mile and a half of the Key, where they may anchor safely.

THE "Eel Grass Shoal" Light Vessel has been re-moored at her station, and will exhibit her light as heretofore.

THE Iron Bell Buoy Boat, marking Flynn's Knoll, in the Bay of New-York, will be removed during the present week, and a red spar buoy put in her place for the winter. NEW-YORK, *Dec.* 18, 1854.

PUMPKIN ISLAND LIGHT-HOUSE, MAINE.—Notice is hereby given, that a Light-house has been erected on Pumpkin Island, Maine, which is intended to serve as a guide to the Western entrance of Edgemoggin Beach, and to Buck's Harbor, Me.

The tower is built of brick, and painted white; the keeper's dwelling is painted brown. The tower is 17 feet high, and the local plane is 27 feet above the level of the sea. The illuminating apparatus is a Fifth Order Fresnel Lens, and the light can be seen, in good weather, from a point 15 feet above the level of the sea, a distance of 9 nautical or 9½ statute miles.

The light will be lighted for the first time at sunset, January 1, 1855, and will be kept burning every night thereafter, from sunset to sunrise.

SHORT PASSAGES.—Clipper Ship "SEA WITCH," Geo. W. Fraser, Commander, arrived at New-York on the 12th ultimo, making an excellent passage of *sixty-four* days, from Valparaiso. Was 14 days from Valparaiso to Cape Horn; came round with heavy westerly gales in lat. 57° South; in 32½ days passed between Trinidad and Martin Vas.; and in 41 days crossed the Equator in lon. 40° West; from thence light winds until she got in the Gulf; had no N. E. trades; calms and light airs from S. E. prevailing. Oct. 14th, Sam'l E. Wilson, ordinary seaman, aged 19 years, died of fistula. Deceased belonged to Boston, Mass.

The Clipper Ship WIZARD, of this port, hence, arrived at Singapore in 78 days' passage; which, we understand, is the shortest ever made from this country.

The schooner RALPH POST, Capt. H. D. Conklin, arrived at Apalachicola in the short passage of eight days and four hours, from New-York.

Ship CLIFTON, Capt. Thomas Ingersoll, hence at New-Orleans, arrived in eight days and fourteen hours.

The clipper ship PANAMA, Capt. Cave, arrived here yesterday, from Shanghai, in the very short time of 85 days and 14 hours.

DISASTERS AT SEA.

STEAMERS.

Propeller William Penn, of New-York, lost in the Black Sea, with French troops.
Bradford Durfel, Warren, for Fall River, struck a sunken rock, Dec. 23, leaked badly, and was run ashore.
Jasper, St. Marks for Key West, got on a sand bar in entering the harbor.
Nautilus, at anchor off Brazos Santiago, Dec. 4, and not seen since.
Underwriter, at San Francisco from Philadelphia, lost spars and sails.
Jamestown, at Richmond from New-York, came in contact with Propeller Pennsylvania.

SHIPS.

City (Whaler), of New-Bedford, Sept. 6, on a sand bar, Ochotsk Sea, went to pieces.
Contest, at San Francisco, from New-York, Sept 22, lat. 58, lon. 63 53, lost everything on deck, with plank sheer.
Louis Philippe, from Baltimore for Valparaiso, lost spars and greatly damaged, Dec. 13, been ashore.
Mary Green, at New-York, from New-Orleans, Dec. 7 and 8, lat. 16, lon. 73, lost sails, &c.
New ship, waterlogged, was seen lat. 42 20, lon. 60, Dec. 10.
St. Patrick, Liverpool for New-York Nov. 29, went ashore at Barnegat, is a total loss.
Miss Mag, at Boston, from London, Dec. 4, lat. 42 55, lon. 57 55, lost spars, &c.
Medomak, at New-York, from Shields, lost sails, &c.
Unknown (barge). Dec. 7, got ashore on Mattanilla Reef.
Adrian. Leghorn for New-York. Dec. 20, ran into Hampton Roads, in distress, leaking badly.
Sunny Side, New-Orleans for Liverpool, totally lost, Dec. 28, on Bahama Banks.
City (Whaler), of New-Bedford, wrecked in the Pacific, Nov. 5, mate and 6 men lost.
Ocean Telegraph, at San Francisco, from New-York, lost some sails off Cape Horn.
Rapid, New-York for San Francisco, shipped a sea, lost binnacle, hatches, &c.
Lady Hobert, Liverpool for Charleston, returned to Bristol Channel.
Frederick Warren, of Boston, in collision with a Dutch vessel in the Categat, went into London docks.
Statira, Morse, New-York for Glasgow, Dec. 5, got ashore near Troon.
Timoleon, early in December, in leaving St. Thomas, got on the rocks, leaks badly.
Medford, Manilla for New-York, lost some spars in the China Sea, in September.
R. B. Forbes, at Whampoa, from San Francisco, sprung aleak on the passage.
Progress, Nov. 14, lost at Balaklava, many lives lost.
Wanderer, Nov. 14, lost at Balaklava, all hands perished.
Rip Van Winkle, lost in the Black Sea, 1097 tons.
Driver, Liverpool for New-York, put back leaky, Nov. 10.
Unknown vessel, passed in lat. 24 30, lon. 37, burnt to water's edge.
Geo. L. Sampson, New-York for San Francisco, grounded on bar, and returned, leaking badly.
Mary Jane, Newport for Rappahannock, Dec. 27, went ashore at Lynnhaven Bay.
Nonpareil, Liverpool for Philadelphia, Dec. 22, put back leaky.
Havana, New-Orleans, going into Bremen, struck on the Tagclear sand, damage slight.
Serampore, Havre for New-Orleans, in collision, Nov. 5, on English coast, and returned.
Thomas Watson, at San Francisco, from Philadelphia, Oct. 7, slightly damaged off Cape Horn.
Memnon (Whaler), of Nantucket, burnt to water's edge, at Payta, a total loss.
Queen of the West, New-York and Liverpool packet, total loss on Caermarthen Bar, Great Britain.
Unknown (new), apparently waterlogged, was seen Dec. 10, lat. 42 20, lon. 60.
Mary Green, at New-York from New-Orleans, Dec. 8, lat. 16, lon. 73, lost sails, &c.
William Tell, at Havre, from New-York, in contact with an English schooner, Dec. 22.
Hellas, at Liverpool, for New-Orleans, parted anchor and went ashore, Dec. 21.
Zaretan, at Queenstown, from New-York, leaking badly.
Meteor, at Calcutta, leaking badly, Nov. 18.
Unknown vessel, about 120 feet keel, was seen Nov. 30, bottom up.
Cochituate, Shields, for Boston, lost sails, and went ashore, in passage to Bressa Sound, Dec. 6.
Rosina, Claypole, Palermo for New-York, put back Dec. 7.
Albatross, at Calcutta, from London, leaks badly, damaged nearly all of cargo.
Ashland, at New-York, from New-Orleans, leaking badly, &c.
Great Western, Liverpool for New-York, was run into by Schooner Arion.
Acorn (new), Dec. 3, entirely consumed by fire, at Waldoboro, value, $85,000.

BRIGS.

Royal Southwick, of New-Bedford, Oct. 10, was passed, lat. 35, lon. 72, waterlogged and abandoned.
Monte Christo, Wilmington for Guadaloupe, put into Nassau, leaking.
Mary Hamilton, Malaga for New-York, lost spars, sails, bulwarks, &c.
Water Lily, was passed, lat. 44 2, lon. 53 42, full of water, and dismasted.
Amesbury, Mobile for Gardiner, lost on Jack Knife ledge, mate perished.
Flora, St. Ann's Bay for Baltimore, Nov. 5, totally lost at Falmouth, Jamaica.
St. Julien, Norfolk for Porto Rico, Oct. 20, lat. 25 40, lon. 66 30, vessel capsized, crew on her bottom 14 days

Lamartine, Gardiner (Me.) for Fall River, Dec. 3, totally wrecked at Beaver Tail Light.
Unknown vessel, Dec. 2, went ashore at Beaver's Tail, loaded with granite.
Unknown vessel, went ashore at Beaver's Tail, loaded with lime, and took fire.
Eliza Ann, ashore at Long Branch.
Unknown, (Herm.) Dec. 6, got ashore on East Chop, Holmes' Hole.
G. P. Perkins, Philadelphia for Boston, ashore at Scituate.
Whittaker, Calais for New York, ashore at Marshfield, (Mass.)
Matanzas, at Boston, got ashore on S. Boston Flats.
Thomas Walter, Philadelphia, at Antigua, lost spars, sails, &c.
Mary Farrow, Machias for New York, Dec. 3, went ashore at Holmes' Hole.
Unknown Brigantine, Dec. 5, ashore on 7 foot Knoll. Baltimore.
Advance, Charleston from Philadelphia, off Cape Lookout, lost main boom and sail, and main and fore topmast staysails.
Gov. Brock, Portland for Philadelphia, broke main gaff, split sails, swept decks, &c.
Emily, at Holmes' Hole, from Philadelphia, lost deck-load of coal, split sails, &c.
J. Cohen, ashore at Ram Island, a total loss.
Tallulah, at Boston, from Savannah, dragged ashore on Nix Mate, was got off.
Rolling Wave, from Port au Prince, lost fore and main topmasts, boats, split sails, &c.
Caroline E. Kelley, from Mansanilla, lost sails, boats and bulwarks.
Brothers, at Norfolk, from Inagua, Dec. 3, struck by lightning and much injured.

SCHOONERS.

Monitor, Wareham for New York, sunk upon a wreck, off Norwalk, crew saved.
Unknown, wrecked off Race Point, 100 tons, nearly new.
A. R. Pharo, for Mobile, put into Norfolk in distress, from a collision.
Champion, 9th Nov. dismasted and abandoned, lat. 34 40, lon 75 35.
Unknown, with loss of foremast, standing S., passed 10th ult. by Schr. Cicero.
Starlight, from Aux Cayes, sprung bowsprit and foremast, split sails.
Onward, 14th ult., lat. 39 40, lon. 13 26, was abandoned at sea, crew saved.
Gem, ashore on Cape Breton, condemned.
Dolphin, ashore at Cutyhunk, wrecked, cargo lost.
Susan, New-York for Belfast, (Ireland) lost boats, ground tackle, sails, and part cargo.
Ware, New-York for Wilmington, 18 Nov. in collision with a barque, and lost jibboom.
Medium, sank on the bar, at Georgetown, S. C.
Unknown vessel, about 200 tons, was seen Nov. 10, bottom up, in lat. 39 30, lon. 72 10.
E. T. Blodgett, Providence for Paraguay, got ashore near Buenos Ayres.
New-York, Boston for New-York, in collision with a schooner, lost head, injured stem, &c.
Emma Furbush, in collision with above vessel, had bow stove, and other damage.
Wasp, Millstone, for ——, Nov. 17, sprung aleak, and sunk near Cape Race.
Jane, Attakapas for New-York, Nov. 30, put into Key West, leaking.
Sarah Maria, of Rockland, Nov 30, in collision with Schr. Dime, near Cape Ann, sank in 15 minutes.
Philadelphia, Tobasco for Boston, wrecked near the Bahama Islands.
George Hotchkiss, New-York for Franklin, (La.) Oct. 21, wrecked on Aguilla Key, Abasco,
Lion, Albany for Portland, Nov. 11, ran into by an unknown vessel, and cut down to water's edge.
John G. Faxon, of and for Newburyport, was abandoned and sunk off Sandy Hook, 75 miles, crew saved.
Wasp, ran ashore near Indian River, wreckers were landing the cargo of grain.
M. M. Freeman, at St. Thomas, from New-York, lost sails, had cabin and bulwarks washed away.
N. H. Rutan, Beaufort for New-York, put into Norfolk, in distress.
James Otis, of Providencetown, went ashore near Newbern Inlet, she had sprung aleak, crew saved.
Pilot Boat Coronet, of New Bedford, went ashore in Gay Head, bilged, crew saved.
Bengal, New-York for Pictou (N. S.), ashore at Merigomish, total loss, cargo flour, damaged.
Orb, Philadelphia for Boston, was run into by Brig Charlotte E. Fay, and sank in few minutes crew saved.
Two Brothers, Frankfort for Boston, ashore on Chatham Bar, total wreck, cargo saved.
Spring Hill, at Boston, from Cape Haytien, struck by lightning, lat. 35, lon. 72, split foresail, injured two men.
Native American, at Newburyport, lost deck-load, stove bulwarks, in a severe gale.
Wm. Cherry, Plymouth N. C., run into Norfolk in distress.
Charger, off Cape Florida, shipped a sea, stove boat, started deck-load, lost foresail, jib, &c.
J. W. Rumsey, from Wilmington, came in leaking, with loss of deck-load rosin.
Chipola, at Pass Cavallo, from New Orleans, put in, leaking, with loss of flying jib.
Silver Cloud, Boston for Fredricksburg, came in contact with Barque Macon, lost mainmast, rail, bulwarks, &c.
John O. Ireland, at Marble Head, sunk alongside the wharf, cargo coal, saved.
Satilla, Savannah for Baltimore, with lumber, was totally wrecked on Cape Hatteras, crew and cargo saved.
Oregon, Lubec for New-York, ashore near Stonington Harbor, cargo, 165 tons plaster.
Maria Foss, Boston for Hancock, capsized off Crabtree's Point, drifted on Mark Island, crew saved.
Warrior, of Rockland, in contact with vessel unknown, had bows cut down, saved.
John Patten, of Bangor, went ashore near Pond Island, crew saved.

Hornet, Aspinwall for Baltimore, condemned, sold at Havana for $408.
A. P. Upshur, with lime, put into Norfolk in distress, loss of spars, sails and rigging.
Venice, of Mystic, Conn., put into Galveston, leaky, by striking wreck of Globe on Brazos Bar.
Don Nicholas, at Providence, carried away rail, bulwarks, and stanchions, lying at dock in gale.
Almira, Joy, was driven ashore in the Bayou La Fourche, total loss.
O. S. Willets, New York for Washington, (N. C.) Nov. 30, ashore on Body's Island.
Daniel Webster, New Bedford for New London, Nov. 29, lost some sails, &c.
Rio Grande, got ashore on Plum Island, Bangor for Boston.
Unknown, about 120 tons, seen Dec. 1, abandoned off Nanset.
Banker, Boston for Arecibo via St. Thomas, Nov. 5, wrecked on northeast part of Porto Rico.
Harriet, Philadelphia for Boston, Nov. 25, wrecked at Bridgehampton, L. I.
John Clark, Kingston, (Jamaica) for New-York, lost sails, &c.
Enoch French, of Fall River, ashore at Long Branch.
Ben Franklin, Bath, (Me) for New-York, Dec. 5, ashore on Goat Island.
Comet, Bangor for Haverhill, (Mass.) Nov 20, wrecked on Plum Island.
Caspian, Bangor for Portsmouth, wrecked below Bangor, Dec. 3.
Forest, ——— ashore below Bangor.
Bolivar, ———Dec. 3, ashore at Newport harbor.
Helena, of Thomaston, Dec. 3, sunk in Mackarel Cove.
Frank, Norfolk, at New-York, lost sails, &c.
Excelsior, Seaford, (Del.) at New-York, Dec. 3, lost spars, sails, &c., and leaking badly.
Hezron, Philadelphia for Newport, lost deck-load, &c., put into New-York Dec. 3.
M. Vanname, from New-York, at Norfolk, got adrift Dec. 3, lost jibboom, in a collision with Citizen, at Norfolk, in collision, and lost foremast.
F. L. Jones, Rockland, (Me.) at New Orleans, caught fire and burned up cargo of lime.
Catharine Allen, Dec. 5, wrecked at Setauket, L. I., crew probably lost.
Banner, Bangor for Lynn, went ashore on Oliver's Island.
Meridian, Gardiner, for Haverhill, wrecked at Newcastle.
2 Unknown, ashore at Newcastle.
Arctic, Philadelphia for Newburyport, got ashore on Plum Island, not much damaged.
J. H. Flanner, at Providence, from Charleston, Dec. 3, off Fire Island, lost sails, &c.
Kosciusko, of Bangor, Dec. 3, sank at South Boston.
E. J. Munsell, Dec. 5, returned to New Bedford, lost anchors, boat, deck-load, &c.
Boston, Bangor for Nantucket, ashore at Marshfield, (Mass.)
Susan, a total loss at Gloucester.
Wanderer, news-boat, capsized, and went ashore near Sandy Hook.
Elizabeth, Thomaston, for Virginia, lost anchors, &c., Dec. 5, in New York Bay.
Oregon, at Yarmouth, (Me.) Nov. 27, destroyed by fire.
Humor, Franklin, (Me.) for Boston, Nov. 24, got ashore on Pond Island Bar.
Charles Colgate, Baltimore for New-York, Dec. 4, lost foremast, &c.
Susan (fishing), Dec. 3, went ashore at Norman's Woe.
C. W. Dyer, at Boston, Dec. 3, lost bowsprit.
Wm. Henry, Rockland for New-York, cargo lime, ashore at Mackarel Cove, took fire and burnt.
Unknown, East Thomaston for Portland, Dec. 3, got ashore on Stage Island (Kennebec.)
Mayflower, Philadelphia for Boston, Dec. 1, lost deck-load, galley, and leaking.
Three Sisters, from E. Machias, ashore on Wood Island, Captain and two hands perished.
Unknown, about 80 tons, masts and bowsprit gone, seen near Portland light.
Unknown, Dec. 5, ashore on Lowell's Island.
R. R. Johnson, totally lost at Fairport, 8 hands lost.
Enoch French, Fall River for Baltimore, ashore at Long Branch.
Medford, Bangor for Lynn, Dec. 3, in collision, slightly damaged.
Johnson, Bangor for Newburyport, Dec. 9, struck a ledge of rocks, near Hampton, not much damaged.
Mary Mershon, Lynn, at anchor, near New London, Dec. 3, parted cable, went ashore at Saybrook.
W. D. Cargill, from Newbern (N. C.), put into Philadelphia in distress, Dec. 11, had lost sails by fire.
Maine Law, at Gregory's Isle, broke adrift, and got on the rocks, lost mainmast, &c.
Onward, Boston for Attikapas, was spoken, had lost some spars.
Philander, Armstrong, from Rondout, Dec, 10, aground bar at Nantucket.
Mary Ann, from Boston, Nov. 26, got ashore at Belle Creek, P. E. I., and is totally wrecked.
Gulf Stream, Wilmington for N. Y., put into Portland, with loss of deck-load, cotton.
Cyrene, for Norwich, cotton and lime, was burned off Black Rock, Dec. 7,
Fame, ashore at Rockland, an old vessel, total loss.
Mount Vernon, went ashore, got off without damage.
Gen. Veazie, Philadelphia for Boston, struck rock off Point Gammon, and was run ashore.
Unknown, bottom up, seen off Cape May by Schr. Charles A. Hannum.
Sharon, Eastport to Alexandria, put into Portland, lost deck-load and boats.
Marietta, at Baltimore from Castine, lost deck-load, damaged upper works.
Albert, from Bangor, parted chains in Boston harbor, went ashore on Spectacle Island bar.
Hope, from P. E. Island for Boston, stranded on Cape John, cargo grain.
Cherry, went ashore near Gray's beach, discharged deck-load and got off.
Sequel, Providence for New-York, ashore at Milford and went to pieces.
N. J. Knight, Boston for Tangier, put into New-York for repairs to rudder and jibboom.
A. Hooper, (new) put into Boston, leaking, three treenail holes left open.
North Branch, of Beaver, (Me.) Dec. 10, was seen 30 miles from Cape Sable, abandoned.
Gull, at Newburyport from Bangor, lost boat and sails.
Unknown, was seen Dec. 6, lat. 42 10, lon. 68 4, abandoned, about 100 tons.]

Commercial and Financial.

UNITED STATES OCEAN MAIL AND NAVAL STEAMERS.

THE ocean postal service of the United States is an enterprise in which the Marine and Naval Architecture of this country are most deeply involved. No other branch of commercial intercourse with nations has awakened so keen a spirit of emulation in nautical mechanism and engineering; nor can we find, in all the vast extent of commercial operations, a more inviting, or nobler field, for the enterprise of Science and Art.

The cause of this pre-eminence is clearly manifest. The rapid transmission of news has ever demanded, in every age and nation, the *swiftest* modes of conveyance, leaving persons and merchandise to follow in natural order. The swift-running footman, the rapid courier, and the carrier dove, as messengers of intelligence, have long passed away; and in their place, the lightning on the electric wire, the locomotive on the iron rail, the ocean steamer on the fluid deep, now mark the resistless mind of man, rushing forward in the circuit of flight, to outstrip time. The agencies of intelligence, wonderful and mighty at the present age, must ever correspond to the advanced condition of human knowledge; and in proportion as we ascend the scale of practical science, acquiring dominion over material obstacles, we hasten the evolutions of intercourse and traffic, and require commensurate facilities for communicating with distant lands.

At the head of the discoveries of the present century stands Ocean Steam Navigation, as yet in its infancy, when we consider our present state of science in steamship architecture and engineering; but susceptible of vast improvement, and capable of advancing with the demands of progress. At this period, however, when we look abroad upon the transcendent prospect of modern Art, the constructive mind fails to discover a more impressive and sublime spectacle than the steam-driven steed on the ocean's plane, ploughing furrows of foam through its crested waves, and urging its resistless way with gigantic strokes.

The perfection of the steamship, therefore, becomes the noblest aim of nautical genius, whether we contemplate the mys-

terms of the model or the wonders of the *machinery*. Strength and speed, the inseparable qualities of success, are alike the agencies of intelligence and in their manifestations at sea, unfold to the cultivated mind of man prolific sources of delight. Hence the zeal for improvement in modelling vessels, when it was clearly demonstrated that most astonishing results might be accomplished in lessening the duration of voyages. *Velocity is, indeed, the measure of perfection in every art.* In ship-building, *strength, security, and success*, are the natural concomitants of SPEED; and the corollary is equally true, whether found in the universe or in mechanism.

The present is not the age to dispute the fact that *Ocean Mail Steamers* require not only the highest degree of speed attainable, and that it be maintained from year to year; but increased velocity should be provided for in a judicious system of steamship construction, which shall secure all the successive improvements of science and experiment, in model and machinery, in each new vessel built from year to year.

It is notoriously true, that under the present mode of building "lines" of mail vessels in one or two years, and then wearing them out in the service, gradually but surely deteriorates the rate of performance; and consequently we find the *averages* of time consumed in trans-Atlantic and other passages, are now becoming greater every year, as the tables of the same will show. By the same tables it will also be seen that the finest modelled steamer falls off the least in performance on account of age.

But if the exigencies of enlightened life thus require all possible perfection in steam-vessels designed for the transportation of mails and passengers, how much more does the vital necessities of national defence and security demand the utmost measure of advantage to be derived from *naval strength* and *velocity?* If the plodding prosperity of business enterprises depends upon a prompt transmission of intelligence, and a rapid carriage of persons, how much more may the independence and freedom of our people become due to the speedy transport ship and the fleet steamer of war? If the fierce rivalry of peaceful pursuits calls forth our highest manifestations of nautical genius, what may be demanded of our maritime skill in the day of sanguinar

conflict with a naval power? Let our statesmen reflect. The highest ends of human effort, whether in commerce or in war, alike require corresponding excellence of means for their accomplishment; whence Mail and Naval Steamers should be coequal in their qualities.

Entertaining these views, and being desirous to secure the palm of superiority for American skill in Nautical Architecture of whatsoever name, we are induced to submit to the people of the United States a scheme of mail and naval service, which, if carried into execution, will, in less than ten years. perfect a system of scientific ship-building that will advance this country beyond the reach of competition for the carriage of ocean mails, by any other naval power, and at the same time introduce an element of naval superiority which we do not now possess, and under the present system are never likely to—namely, unequalled speed and efficiency, in combination with a light draught of water in war steamers.

In delivering this opinion, we are well aware that eminent naval authorities have decided that *screw* steamers are altogether the best adapted to the purposes of war. This position we do not now intend to dispute, when viewed with respect to engagements at sea; but when the demand for *speed* is pressing, the side-wheel mode of propulsion assumes supremacy over the screw; and its superiority is also manifest when a light draught becomes indispensable for the navigation of shoal waters, either for supplies, for shelter, or for the conveyance of dispatches.

The *Propeller*, if it is to be submerged, necessarily requires a greater draught of water than the side-wheel steamer, causing more resistance on the hull, and thus cutting down the speed, and also preventing the ingress of shoal harbors.

In the present foreboding aspect of affairs, it should be considered a very grave and important question, whether we shall speedily possess a suitable description of steamship of the largest class, which shall be unequalled against the world, in strength and velocity, and capable, also, of entering nearly all the ports of the United States; or whether we shall rest contented to invest millions of the national treasure in huge clumps of steam and sailing vessels of enormous draught of water, and of only mod-

erate speed? The navy of the United States is not only destitute of this description of vessels, adapted to unsurpassed speed and light draught, which has been abundantly proved by the British operations in the Baltic, as invaluable in war as in peace; but under the present dispensation of genius for originating its impotent qualities, it is never likely to be supplied with such. But shall Americans, who are deeply stung by this reproach, consent to forego those advantages which would follow the introduction of so great a novelty as speed in the navy, on account of an obstacle that may be so easily removed? Let *Congress* decide.

It requires but a moment's consideration to perceive that velocity is a quality quite as indispensable in naval as in commercial operations, at least when the former amount to something more serious than child's play or sham. We have confidence that this will appear self-evident to all imbued with the manly spirit of the age. Nor does any sound reason exist why the Mail and Naval Service of the United States may not combine harmoniously, in the same vessel, those elements of velocity which adapt the ocean steamer to the highest degree of speed attainable by the skill of man. The function of this quality is the same for each, namely, the swift transportation of intelligence and persons.

In view of these facts, and one other, which is that the ocean carriage of mails is generally deemed to be a proper object of national enterprise, we are induced to propose that the government of the United States immediately undertake the construction of such steam-vessels as shall be at once adapted to the highest purposes of war and commerce, of such size and speed as shall be able to cross the North Atlantic within 7 or 8 days, and the North Pacific within 17 days, and to be completely designed, in accommodations and equipments, to carry either mails, passengers and freight, or the armament, men and stores for a belligerent cruise.

Let us begin with at least two steamers of 5,000 tons each, similar to a proposed line we have already described, on each side of the continent, to connect New-York with Liverpool, and San Francisco with China, and follow up, in each successive

year, with at least one additional steamer, of from 3,000 to 5,000 tons for each route, as may be required, and others for new routes, embodying in every successive vessel the latest and most valuable improvements in *model, construction*, and *machinery*, with a view to the attainment of the highest rates of velocity, strength and security, which it may be possible to reach. As fast as superior vessels could be furnished for the most important lines, let them be supplied in place of inferior ones, which might be detailed for other branches of mail service, or detached for naval operations.

Thus we would introduce a systematic improvement of ocean mail and naval steamers, which should be open to the architectural and engineering genius of the whole country; and therefore calculated to exert a salutary influence upon the progressive spirit of nautical mechanism.

Having built the steamers, and supplied them with sufficient United States officers to protect them in good usage, let these vessels then be let to responsible commercial men, who shall take them, and agree to carry the United States mails free of any other remuneration whatever, for a term of one to three years, and they to pay all expenses of running and repairing, and to find compensation for their services in managing the enterprise, in the fruitful revenue to be derived from the freight and passenger lists. Under such an arrangement, it would cost the government *nothing* for the ocean transportation of the mails, whereas we now pay one and a half millions, besides near another million as extra compensation, so called—money enough, in eight years, to build a sufficient number of mail and naval steamers, from 3,000 to 5,000 tons, to serve every important line on either side of the continent, and after such an expenditure for several years, in the event of requiring any of the present mail steamers, although unequalled by any others in the world, they are unfit for *naval* service, and the government would still have to purchase them, at a dear rate, after paying more than they cost for their use. On the other hand, under the proposed system of the government owning the vessels, it would only be necessary to put them into commission, with their armament, munitions, and men on board, and get ready for duty in a very brief space of time.

In conclusion, we say, let the contract with the Collins line be kept in good faith, until the termination of the period for which it was made, and then the government would be in a position to help itself; and there will be no difficulty in securing the services of eminent commercial men to take the government vessels on the terms we have proposed. Even Mr. Collins, himself, might be induced to undertake the management of the enterprise.

SCHEDULE OF PASSAGES BY THE COLLINS, CUNARD AND BREMEN STEAMERS FOR 1854.

Having proposed the adoption of a new system of ocean postal service, that contemplates the carriage of the mails in national vessels of increased magitude, and of a speed very far in advance of any mail steamers yet afloat, we feel it incumbent upon us to show, more fully, the character of the present system, and its prospects for maintaining the American supremacy in steam navigation, which legitimately belongs to us by the right of genius and enterprise. For this purpose we have compiled the following exhibit of passages, showing the average time of each of the Collins and Cunard Steamers, between New-York and Liverpool; and also that of the Bremen Steamers, between New-York and Cowes, Eng., during the year 1854. It is in statistics like these that the finer qualities of rival, or consort vessels, become at once manifest, even to the most obtuse mind. No one could fail to ascribe to the Arctic and the Arabia the palm of superiority in their respective lines, when the regularity of their trips, and the equalization of the time of Eastern and Western passages, are noted. These vessels (the Arctic is lost, but we may speak of her achievements,) are not only the best performers in making steady passages, but the newest, and decidedly the sharpest and finest models in their respective lines. The dullest steamers will be found to be the oldest and fullest of the line, whose speed is also fast becoming infirm; whereas the finer models among the first in the line still hold out in performance against so large a measure of depreci-

ation. We regard the western passages as affording the best for the stern trial of merit in architecture and engineering, inasmuch as adverse winds, currents and sea, combine to prolong the voyage and most severely test the navigator's skill. And here we find the superiority of the Collins line over all others; and the lamented Arctic had no match among them all. The *Arabia* is now the swiftest North Atlantic steamer, being rather an over-match for the Baltic, on the average of the western passages, or for the Pacific, on the average of the eastern, while in making the latter passages, she can do better than to average the very best time of the staunch old Atlantic. The Asia is the next best Cunarder, but she fails to match, by many hours, a single one of the Collins steamers in making the western, or test passages. The Collins Steamer Baltic has made the shortest western passage on record, being 9½ days; while both she and the Pacific have made the eastern passage in 10⅛ days.

Average Time of Eastern Passages of the Collins Steamers, between New-York and Liverpool.

	D.	H.	M.
Arctic, average time of 3 passages	10	12	—
Pacific, do. do. 8 do.	10	22	20
Atlantic, do. do. 8 do.	11	11	—
Baltic, do. do. 7 do.	11	13	41
Average time of 26 passages	11	5	33
Shortest passage by the Pacific and Baltic	10	3	—

Average Time of Western Passages of the Collins Steamers, between New-York and Liverpool.

	D.	H.	M.
Arctic, average time of 2 passages	10	10	—
Baltic, do. do. 6 do.	11	16	2
Pacific, do. do. 8 do.	12	9	11
Atlantic, do. do. 7 do.	12	12	37
Average time of 23 passages	12	2	31
Shortest passage by the Baltic	9	12	15

Difference of time between the eastward and westward passages of the Arctic, = two hours; of the Baltic, = two hours and twenty-one minutes; of the Pacific, = one day, eleven hours and fifty-one minutes; of the Atantic, = one day, one hour and thirty minutes.

complishment of several first-rate passages by both the lines, and the well-sustained heat of competition for the supremacy, we find the law of depreciation taking rank hold of the finest mail steamers of Europe and America, and gradually *widening* the ocean by an accelerating *loss of speed*—the ratio of per centage increasing with the lapse of years. It is plain to be seen, that a line of steamers may be built to bring the averages of passages within 10½ days both ways—for the Arctic and Arabia can do it; yet this would be gaining but from one to two days, on the average. This moderate advance, which we have already within our reach, ought not to satisfy an American mind. Let the Government of the United States determine, at once, upon two things, namely: of inaugurating a new era in *mail* and *naval* steamship service, uniting the two according to our proposition, and securing an Atlantic transit within at least *eight* days. Such vessels *can*, and *ought*, to be constructed; or it may yet be again our unenviable lot to look on with mortification and chagrin, while British capital not only awakens to bolder enterprises in steam navigation, but seizes upon the very *avenues* to the proud supremacy of the seas. Inventive genius knows no distinction of birth place or country; and it only requires the capital which British wealth can furnish, added to the science of American mechanics, to accomplish such stupendous results, if our own enterprise is found insufficient to undertake it.

PIONEER LINE OF AUSTRALIAN PACKETS.

AMONG the numerous lines of sailing vessels which unite this commercial metropolis to every quarter of the globe, the pioneer line of Australian packets is not the least imposing. We are, and ever have been, disposed to give preference to regular lines of transit, because of the reliability secured to passengers, over that found in the transient vessel, as to time of sailing, as well as the length of the voyage. In taking the average time of seven steamers, (for ocean travel is now measured by days and hours, instead of miles, as formerly,) from Southampton, England, to Melbourne, we find that 96½ days were required to make the passage, which is more than the vessels of this line require, al-

though the distance from New-York to Melbourne is greater than from Southampton thence, by several days. The proprietors of this line deserve the highest credit for the bold and enterprising spirit developed in its construction, both as it regards the character of the vessels, and their determination to make this not only the first, but the best, line of clipper ships to Australia. We had designed to publish the log of the Nightingale one of the ships of this line, but shall be unable to do so in the present number. We shall endeavor, however, to make amends by inserting a lithograph of the vessel herself, inasmuch as the particulars of her construction are beyond our reach, consequent upon the decease of her builder.

The following letter from Messrs. Sampson & Tappan, of Boston, to R. W. Cameron, Esq., of 116 Wall Street, one of the proprietors and agent of the line, will speak for itself:—

BOSTON, *January* 10, 1855.

R. W. CAMERON, Esq., NEW-YORK:—

DEAR SIR:—We have no abstract of the log of ship Nightingale. Capt. writes us he has one, and shall send it to Lieut. Maury. From his letters we give you the following:—Ship had 75 days 16 hours from anchorage to anchorage; 30½ days to the line, all the time light baffling airs and calms; from the line into anchorage at Hobson Bay, Melbourne, 45 days, which is the shortest passage on record.

We cannot give you the particulars of the ship, as we never had them, beyond simply length, breadth, &c. Her builder died some year or more since. Her dead rise we measured when in dock, and it was *forty-five inches!*

In going to Melbourne she run as far South as 57°; in the longitude, 120° East.

We take from the register the following:—177 9-10 feet length; 36 feet beam; 1,066 12-95 tons.

Depth of hold, we think, is 19, and may be 20 feet, but we are not sure.

We wish we could give friends Griffiths & Bates more valuable information about this sweet craft.

We are truly yours,

SAMPSON & TAPPAN.

The following is the order in which the ships of this line have

sailed for Sydney and Melbourne, which, we presume, is a sufficient guarantee for future regularity :—

Revenue, 1,300 tons, July, 1852
Epaminondas, 1,400 tons, Aug., 1852.
Ocean Eagle, 1,450 tons, Sept, 1852.
Onreo, 1,500 tons, October, 1852.
Scargo, 1,450 tons, December, 1852.
Baltimore, 1.300 tons, January, 1853.
Euphrasia, 1,200 tons, March. 1853.
Oregon, 1,000 tons, March, 1853.
Nimrod, 800 tons, April, 1853.
Sea Ranger, 1,200 tons, July, 1853.
Lady Franklin, 900 tons, Aug., 1853.
Edward, 1,400 tons, October, 1853.
Ocean Steed, 1,600 tons, Nov., 1853.
Carthage, 900 tons, December, 1853.
Albert Franklin, February, 1854.
Nightingale, 1,066 tons, May, 1854.
Gertrude, 1,200 tons, July, 1854.
Flying Scud, 1,713 tons, Sept., 1854.
Nimrod, 800 tons, October, 1854.
Tropic, 700 tons, December, 1854.
Windward, 800 tons, Dec., 1854.
Ocean Queen, January, 1855.

The new clipper ship Georges, of 1,200 tons, will succeed the Ocean Queen, and sail on the 1st of March, 1855. Australia, when first discovered, in 1787, was called Botany Bay.

SHIP-BUILDING ON THE LAKES.

(*Continued from page* 298.)

No. 2.

The following Table will show the class, name, tonnage, by whom built, and at what ports other than Buffalo, of all Vessels built in the District of Buffalo Creek, during the past ten years :—

1845.

Class.	Name.	Tons.	By whom Built.	Where Built.
Schooner	Big Z.	60		Eig'teen M. Creek
"	Hard Times	45		"

1846.

Class.	Name.	Tons.	By whom Built.	Where Built.
Schooner	G. T. Williams	167		Irving.

1847.

Class.	Name.	Tons.	By whom Built.	Where Built.
Schooner	Windsor	269	C. Stevens	Irving.
"	Boneta	109	J. Harrison	"
"	Abiah	353	C. Stevens	"
"	Lion	30	J. Potter	Barcelona.
Brig	H. R. Seymour	245	Asa. Wilcox	Three Mile Bay.

1848.

Class.	Name.	Tons.	By whom Built.	Where Built.
Brig	J. McBride	271	C. Stevens	Irving.
Schooner	Ivanhoe	237	"	"
"	Big Z, 2nd	168	"	"

1849.

Class.	Name.	Tons.	By whom Built.	Where Built.
Brig	Flora	300	C. Stevens	Irving.
"	C. A. Bemis	207	"	"
Schooner	Wm. Buckley	99	Geo. Foster	"

Class.	Name.	Tons.	By whom Built.	Where Built.
Schooner	Tiger	42	A. Ames	Irving.
"	W. W. Brigham	121	C. Huntley	Cattaraugus Creek.
		1850.		
Steamer	Kossuth	118	H. A. Chase	Tonnawanda.
Schooner	W. D. Talcott	69	H. Ricker	Irving.
"	J. P. Kent	100	J. A. Johnson	"
		1851.		
		No Vessels Built.		
		1852.		
Schooner	J. M. Lee	100	E. Horton	Irving.
		1853.		
Schooner	Autares	176	C. Stevens	Irving.
"	Hanover	237	"	"
"	Gen. Pierce	63	Geo. Porter	"
		1854.		
Schooner	Grand Turk	327	C. Stevens	Irving.
"	Autocrat	345	"	"
"	Clifton	165	"	"
"	Watchman	43	J. G. Dingman	Evans.

No. 3.

Statement showing the name, tonnage and value of all Vessels belonging to the District of Buffalo Creek, N. Y., December 1st, 1854.

Class.	Name.	Tons.	Class.	Name.	Tons.
Propeller	Pocahontas	426	Propeller	Queen of the Lakes	563
"	Sandusky	370	"	Charter Oak	184
"	Detroit	293	"	Charter	241
"	M. B. Spaulding	419	"	New-England	351
"	Illinois	530	"	Sun	629
"	Ohio	441	"	International	473
"	Iowa	981	"	Troy	304
"	Milwaukie	616	"	Cataract	393
"	St. Joseph	460	"	Genesee Chief	429
"	Underwriter	107	"	Nile	656
"	Oriental	950	"	F. W. Backus	282
"	Echo	115	"	Brunswick	510
"	Saginaw	407	"	Westmoreland	665
"	Indiana	349	"	Owego	483
"	Mayflower	623	"	Portsmouth	525
"	Bucephalus	493	"	Alleghany	468
"	Edith	549	"	P J. Barton	40
"	California	420	"	Dunkirk	544
"	Oregon	312	"	Toledo	585
"	Paugasset	290	"	Plymouth	846
"	Niagara	450	"	Mount Vernon	577
"	Sciota	384	"	Wm. Peck	125
"	Buffalo	689			

Total Tonnage............19,672
" Value............$895,000

Total Steam Tonnage belonging to the District..................39,653
" Value..$2,648,000

SAIL TONNAGE.

Class.	Name.	Tons.	Class.	Name.	Tons.
Barque	Great West	765	Schooner	Homer Ramsdell	275
"	Trade Wind	374	"	Effort	77
"	Canada	660	"	Antares	176
"	Jesse Hoyt	472	"	Arcturus	412
"	Sunshine	550	"	Orion	305
Brig	Tuscarora	253	"	C. Ames	142
"	H. R Seymour	245	"	Puritan	223
"	Preble	217	"	Dahlia	210
"	Ramsey Crooks	228	"	Aldebaran	303
"	David Smart	203	"	J. M. Lee	100
"	Castalia	241	"	Troy	122
"	J. R. Giddings	269	"	Cairo	355
"	Oleander	262	"	Autocrat	345
"	Empire State	396	"	Sardis Burchard	196
"	Northampton	241	"	Arab	204
"	St. Louis, 2nd	185	"	Grand Turk	327
"	Greyhound	367	"	Harriet Ross	229
Schooner	Virginia Pardy	301	"	Free Trader	111
"	Ivanhoe	237	"	North Carolina	95
"	Pilgrim	228	"	Stranger	124
"	Dan Marble	213	"	West Wind	255
"	Mansfield	213	"	H. L. Lansing	369
Brig	Young America	346	"	Montgomery	248
"	Globe	319	"	Roscoe	135
"	Buffalo	263	"	Illinois	110
"	Wm. Monteath	261	"	Post Boy	95
"	Lowell	255	"	C. Reeves	279
"	Mohegan	248	"	Morning Star	21
"	Odd Fellow	224	"	Hanover	237
"	Emerald	185	"	J. K. Polk	72
"	Fashion	223	"	Abiah	353
"	Banner	431	"	Fox	405
"	John Hancock	260	"	H. H. Brigham	121
"	Constellation	260	"	Miranda	217
"	Virginia	160	"	Albatross	234
"	Andes	268	"	Tuscola	221
"	Mahoning	259	"	Crevola	212
"	L. A. Blossom	258	"	May Queen	43
"	Sandusky	225	"	Lewis Cass	191
Schooner	M. H. Sibley	252	"	Home	127
"	Petrel	208	"	International	389
"	A. Belmont	208	"	Aurora Borealis	94
"	P. P. Pratt	196	"	J. W. Brown	238
"	G. T. Williams	167	"	Luther Wright	195
"	A. Barton	155	"	William	178
"	Big Z	168	"	North Star	366
"	Windham	236	"	Frances	120
"	Almeda	269	"	Richard Mott	376
"	Lodi	66	"	Little Belle	158
"	Suffolk	250	"	Pearl	151
"	Hope	249	"	Three Bells	305
"	Excelsior	247	"	Trenton	132
"	R. Emmet	245	"	Wm. Wallace	83
"	Geo. Davis	238	"	J G. King	153
"	Wing and Wing	216	"	Arkansas	240
"	Magnolia	198	"	Robert Bruce	330
"	Albany	144	"	Wm. L. Manning	85
"	Gen. Pierce	63	"	Hurricane	331
"	Navigator	108	"	Flora Watson	295
"	Flying Dutchman	74	"	Dawn	202

Total Sail Tonnage............................28,279
Value " " $975,000
Total Tonnage belonging to this District............67,933
* Value " " " " " $3,623,000

* The valuation given above is taken from the books of two Insurance Companies of Buffalo, showing at what figures they are willing to take risks on the several vessels belonging to the District. As a general thing, the estimates are under the real value of the vessels, and we therefore consider the above valuation as a very low one.

Class.	Name.	Tons.	Class.	Name.	Tons.
Steamer	Crescent City	1,746	Steamer	Globe	1,223
"	Queen of the West	1,851	"	Buckeye State	1,274
"	Northern Indiana	1,475	"	Lady Elgin	1,037
"	Southern Michigan	1,470	"	Troy	546
"	Mississippi	1,829	"	Sultana	806
"	St. Lawrence	1,844	"	Empire	1,440
"	Empire State	1,691	"	Hudson	750
"	Diamond	331	"	Fox	102
"	Golden Gate	560			

Total Tonnage.........19,981
" Value...........$1,753,000

STATISTICS.

Report of Commerce and Navigation.—The report on commerce and navigation accompanies the other reports laid before Congress. It contains some very interesting statistical information upon the subject of ship-building and other matters pertaining to the growth of our commercial interests. We are able, from the records, to compile the following tables :—

Statement *of New Vessels built in the following Cities during the year* 1854.

	Ships and Barques.	Brigs.	Smaller Vessels.	Steamboats.	Total Tonnage.
Passamaquoddy	18	13	6	—	15,093
Waldoboro'	26	11	27	—	31,476
Belfast	9	17	13	—	12,067
Bath	56	9	4	—	53,451
Portland	23	2	6	—	16,533
Boston	59	1	4	3	69,550
New-Bedford	13	1	—	—	6,256
New-York	40	7	185	36	63,496
Philadelphia	6	4	133	14	24,123
Baltimore	13	3	36	4	16,618
Louisville	—	—	—	22	6,324
St. Louis	—	—	—	7	3,071
Cincinnati	—	—	—	28	11,186
Detroit	1	1	21	7	7,642

Total Tonnage of the U. S. for the year ending 30th June, 1854.

Registered Tonnage.	Total Tonnage.
Registered vessels employed in foreign trade on 30th of June, 1854	2,333,819

Enrolled and smaller Vessels.

Enrolled vessels employed in the coasting trade 30th June, 1854 2,273,900
Smaller vessels under 20 tons.......... 45,214—2,622,114

Fishing Vessels.

Enrolled vessels employed in the cod fishery	102,194	
Enrolled vessels employed in the mackerel fishery	35,041	
Smaller vessels under 20 tons in cod fishery	9,734	—146,965
Registered tonnage in the whale fisheries	181,901	
Registered tonnage in steam navigation	96,036	
Enrolled tonnage in steam navigation	581,577	
Total tonnage of United States 30th June, 1854		5,661,416

—*Boston Post.*

ABSTRACT *of Shipwrecks and Disasters on Florida Reefs in* 1854, *with the Amount of Salvage, Losses, Expenses, &c., from Statistics compiled at Key West.* (Correspondence New-York HERALD.)

Total tons	22,513
Total value of vessels	$974,000 00
Total value of cargo	1,268,454 86
Total expenses	72,724 55
Total salvage	89,472 87
Total loss	402,705 21
Value of vessels wrecked	435,000 00
Value of cargoes wrecked	333,794 00
Value of property subject to salvage	768,794 00
Value of property not subject to salvage	1,473,660 00
Value of property endangered by the reef and by accidents at sea	1,242,454 00
Value of vessels arriving in distress, leaking, dismasted, &c	539,000 00
Value of cargoes on board these vessels	934,660 00
Amount of property totally lost	230,000 00
Probable loss to underwriters from all accidents reported here	450,000 00
Probable loss to underwriters from dangers of the reef	305,000 00
Expended at Key West for wharfage, storage, labor, &c	75,000 00
Salvage paid the wreckers, 300 in number	36,000 00
Average share of each man	120 00
Total salvage awarded crews and owners of vessels	72,000 00
Number of vessels assisted by the Florida wreckers, and saved	15
Number of vessels totally lost on the reefs	10
Number of vessels ashore, and got afloat without aid	7
Total number ashore during the year	32
Number of arrivals in distress	33
Total number of accidents	65
Steamships, American	2
Ships, American	16
Barks, American, 5; British, 2	7
Brigs, American, 14; Spanish, 1; British, 1	16
Schooners, American	24
Number of wrecking vessels	22
Tonnage of same	2,000 00
Number of crew	300
Ratio of salvage to property saved	12 to 100
Ratio of loss to property insured	18 to 100

It will be seen that the number of accidents steadily increases, and that the value of property endangered is greater than in any previous year. The number that have been ashore is not so great, yet the total losses are larger than in '53, and the amount of property lost exceeds that of any year since 1846. The value of property brought before the Admiralty Court for adjudication is close upon a million, yet the Judge has considered that the actual services rendered by the salvors were well compensated by an average award of twelve per cent.

List of Vessels *built in the District of Portland and Falmouth during the year* 1854.

Names of Vessels.	Names of Builders.	Tons.	95ths.
Ship Phenix	Thomas E. Knights	1484	76
" A. B. Kimball	John Blithen	597	86
" Robert M. Sloman	Edmund G. Merrill	758	76
" Celestial Breeze	A. S. Merriman	491	88
" Sam Dunning	Samuel Dunning	1592	33
" Champion	Curtis & Estes	563	78
" Superior	E & H. Soule	1240	89
" Sentinel	G. H. Bliss	929	42
" Helios	Lyman Walker	694	41
" Ben Bolt	A. Hutchins & Co	709	55
" Fannie S. Perley	Briggs, Means & Co	1127	19
" Sebago	Hall & Bartol	1258	08
" Metaro		1037	34
Barque Albion Lincoln	Jeremiah Jordan	237	40
" Casco	Ralph Kelley	266	78
" Corporal Trim	E. & H. Soule	463	01
" New Empire	William Merrill	475	83
" Dorcas C Yeaton	Lemuel Dyer	480	58
" William Woodside	Pennell & Brothers	462	69
" White Sea	Joseph W. Dyer	577	78
" Genesee	Rufus Soule & Son	673	62
" Chevalier	Harmon Pennell	478	70
" Antagonist	J. & E. Hunt	362	91
" Pointer	David Spear	506	65
" Willard	Lyman Walker	552	04
Brig Niagara	B. W. Pickett	268	10
" Orison Adams	Joshua Waite	227	58
" J. D. Lincoln	Sampson & Thompson	250	02
" Scotland	B. W. Pickett	284	53
Schooner Eleanor		38	49
" Ocean Home	Lemuel Dyer, 2d	124	09
" John C. Brooks	T. E. Knights	199	74
" Bridgton		13	53
Sloop Twilight	Dunning	23	33
Boat Sand Fly		5	13
Total		19,476	89
Whole number of vessels			40

In addition to the vessels enumerated in the above schedule, there are now afloat in Portland harbor, an aggregate of about 10,000 tons of new ships, not yet measured for registry. Adding this aggregate, it would give 29,480 tons, 69-95ths, built in this district in 1854.

SHIP-BUILDING IN PHILADELPHIA.

Launched by Theodore Birely—March 18, 1854—Steam tug Tempest, built for M. & W. Molloy, 90 feet long, 18 feet beam, 7 feet hold, and 107 tons. Engine by Reaney, Neafie & Co.

March 29—Steam tug S. G. Chase, built for Chester Burbanks, of Albany, N. Y., 50 feet long, 12 feet beam, 5½ feet hold, and 30 tons. Engine by Reaney, Neafie & Co.

April 4—Steam barge Beverly, contracted by Capt. R. F. Loper, designed for

the Merchants' New-York Transportation Line, 100 feet long, 24 feet beam, 8 feet hold, and 173 tons. Engines by Reaney, Neafie & Co.

June 8—Steam tug Baltic, built for S. Flanagan, 91 feet long, 18 feet beam, 7½ feet hold, and 115 tons. Engine by Reaney, Neafie & Co.

June 27—Steam ferry-boat, built for Camden and Amboy Co, 110 feet long, 22 feet beam, 9 feet deep, and 202 tons. Engine by Reaney, Neafie & Co.

July 7—Steamship General Knox, built for Capt. R. F. Loper, 150 feet long, 21 feet beam, 9 feet deep, and 308 tons. Engines by Reaney, Neafie & Co.

July 22—Steam tug Lily, built for S. Flanagan, 60 feet long, 14 feet beam, 6½ feet hold, and 50 tons. Engine by Reaney, Neafie & Co.

August 26—Steam tug Aaron B. Ward, built for Alfred Mosher, of West Troy, N. Y., 60 feet long, 14 feet breadth of beam, and 50 tons. Engine by Reaney, Neafie & Co.

August 28—Steam tug Robert Reed, built for Chester Burbanks, of Albany, N. Y., 60 feet long, 14 feet beam, 6½ feet hold, and 50 tons. Engine by Reaney, Neafie & Co.

Sept. 4—Fishing sloop Theodore Bireley, built for Samuel Collar, 36 feet long, 12 feet beam, 4 feet hold, and 15 tons.

Sept. 23—A steam tug, built for Charles W. Copeland, of New-York, 60 feet long, 14 feet beam, 6½ feet hold, and 50 tons.

Nov. 29—Steam tug Edwin Forrest, built for Capt. Wilson and William Baird, 60 feet long, 13 feet beam, 6½ feet hold, and 46 tons.

Dec. 7—Schooner Mary A. Banks, built for Capt. Wm. J. Banks, Wm. H. Bodine, David Woodruff, J. L. Harnard, and J. Harned, 110 feet long, 28 feet beam, 8½ feet hold, and 233 tons.

Total, 11 steam vessels, 1 schooner, and 1 sloop—1,429 tons.

On the stocks—Two barges for the New-York Transportation Line, 110 feet long, 28 feet beam, and 8 feet hold, each 225 tons—total, 450 tons.

Launched by William Cramp—March 31, 1854—Ship Isaac Jeanes, built for Isaac Jeanes & Co., 160 feet long, 34 feet beam, 21½ feet hold, and measuring 843 tons custom-house measurement.

May 10—Steam tug Underwriter, built for William P. Williams, of New-York, 135 feet long, 27 feet beam, 12¾ feet hold, and 433 tons. The engines were built by Messrs. James T. Sutton & Co

June 24—Brig George Butz, 112 feet long, 27 feet beam, 9½ feet hold, and 269 tons.

Sept. 27—Ship William Chamberlain, built for Isaac Jeanes & Co., 168 feet long, 35 feet beam, 23 feet hold, and 950 tons.

Total, 1 steam tug, 2 ships, and 1 brig—2,195 tons.

On the stocks—Ship Bridgewater, to be launched soon, for Messrs. Isaac Jeanes & Co., is 198 feet long on the deck, 40 feet beam, 28½ feet hold, measuring 1,465 tons. She has three decks.

Also, a large clipper ship, to be launched about the 1st of March next, for Messrs. Bishop, Simons & Co., of this city, 205 feet long on deck, 39 feet beam, 29 feet hold, and measuring 1,454 tons.

Total, 2 ships, measuring 2,919 tons.

Launched by Messrs. Stewart & Walter—March 4, 1854—Barque Washington Butcher, built for Capt. Collins and Charles Miller & Co., 370 tons.

May 10—Steamboat Islander, built for A. Manderson & Co., 50 tons.

June 29—Schooner Jane N. Baker, built for Capt. Collins and C. Miller & Co., 261 tons.

Sept. 28—Three-masted schooner Andrew Manderson, built for Capt. B. H. Henderson, C. Miller, Francis McCurdy, and John Shindler, 379 tons.

Total, 4 vessels, 1,060 tons.

On the stocks—One barque of about 380 tons, and a steamboat of 75 tons. Total, 2 vessels of 455 tons.

Launched by Vaughan & Linn—May 2, 1854—Steamship Quaker City, for

the Charleston Steamship Line, 240 feet long, 36 feet beam, and 22 feet depth of hold, 1,500 tons burthen. Engines by Messrs. Merrick & Son.

On the stocks—Ship Lancaster, 187 feet long, 37 feet beam, and 31½ feet hold, tonnage 1,200. For Messrs. Penrose & Burton.

Launched by Messrs. Bireley & Linn—May 20, 1854—Propeller steamboat Diamond State, for the Philadelphia and Leipsic Steamboat Company, 100 feet long, 23 feet beam, and 7 feet hold, 144 tons. Engine built by Messrs. Betts & Pusey, Wilmington.

June 3—Steam tug Mariner, for the Wilmington, N. C., packet line of Messrs. Baker & Stetson, 93 feet long, 20 feet beam, and 7½ feet hold, 144 tons.

Sept. 23—Schooner David Faust, for Messrs. Baker & Stetson, 102 feet long, 27 feet beam, and 9½ feet hold, 210 tons.

Oct. 7—Schooner William L. Spring, for Baker & Stetson, 102 feet long, 27 feet beam, 9½ feet hold, 240 tons.

Total, 4 vessels, 728 tons.

Launched by Messrs. Hillman & Streaker—Feb. 22, 1854—Schooner Martha and George Washington, built for John Guyant, 55 feet long, 16¾ feet beam, 5½ feet hold, and 43 tons.

April 15—Schooner Morning Light, built for G. W. Matthews, 59 feet long, 17½ feet beam, 6 feet 2 inches hold, and 58 tons.

July 6—Steam tug Martin H. White, built for Reaney, Neafie & Co., who furnished the engine, 93 feet long, 23 feet beam, 10 feet hold, and 193 tons.

August 12—Steam tug Huron, built for Baker & Stetson, 88 feet long, 19 feet beam, 7½ feet hold, and 113 tons. Engine built by James T. Sutton & Co.

Oct. 10—Sloop Streaker, built for Josiah Hillman, 35 feet long, 12 feet beam, 4 feet hold, and 14 tons.

Dec. 2—Steam tug Uncle Sam, built for James T. Sutton & Co., who furnished the engine, 88 feet long, 19 feet beam, 7½ feet hold, and 113 tons.

Total, 3 steam tugs, 1 schooner, and 1 sloop—534 tons.

Built at Kennebunk in 1854.—Ship Abby Brown, 467 tons; ship General Nowell, 1,000 tons; brig Abby Taylor, 304 tons; ship Lizzie Thompson, 765 tons; ship Anna F. Schmidt, 784 tons; ship Gulf Stream, 899 tons; brig F. W. Horn, 259 tons; brig Poinsett, 269 tons; ship Simoda, 944 tons; ship Ira Russell, 1,183 tons.

One barque, to be finished this winter, and three ships, to be finished early next season, now on the stocks.

Vessels Built at Jonesboro', Me.—By Daniel Farnsworth, a schooner of 188 tons, called the D. J. Sawyer.

By E. Richardson, a barque of 386 tons, called the Dublin—length 123 feet, breadth 29 ft. 2 inches, depth 11 ft. 11 inches.

Built by J. M. Jones, at Milwaukie, during the year 1854—Schooner Fred. Hill, 260 tons, owned by Wells & Hill.

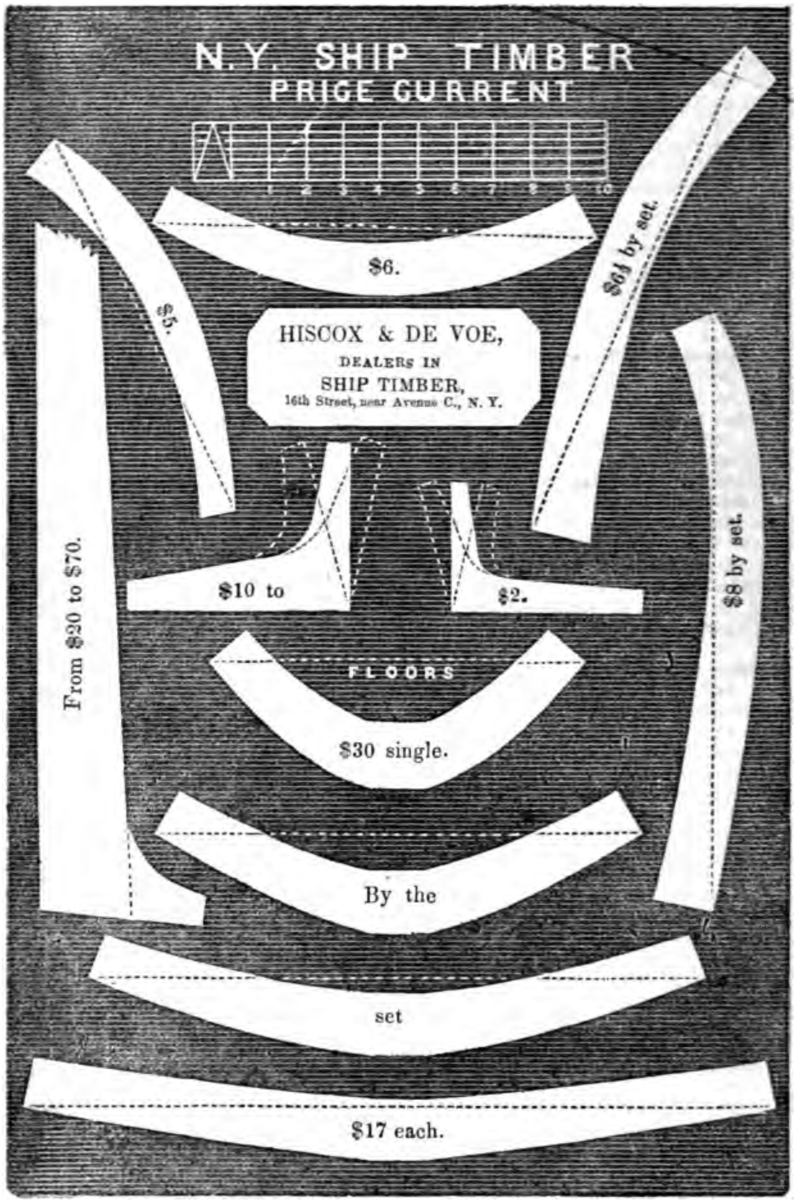
Schooner Norway, 230 tons, owned by Norris & Shorson.

Schooner D. O. Dickenson, 329 tons, owned by D. Newhall.

Schooner Wallen, 47 tons, owned by J. Schwarts.

Schooner Milwaukie Belle, 368 tons, owned by D. Newhall.

Sloop Myron, 100 tons, owned by J. M. Jones.



A set of floors and futtocks, $9 each piece. Flitch timber, 30 to 35 cents per cubic foot; oak plank, $40 per M.; deck plank, $30 per M.; hackmatack timber, 25 cents per cubic foot; chestnut, ditto; cedar, 60 to 75 cents; yellow pine timber, rough, $25 to $35; ditto, sawed, $30; yellow pine plank, $30 per M.

KNEES.—Oak, 5 inch, $3 each; hackmatack, $2.50; oak knees, 6 inches, $5; hackmatack, $3; oak knees, 7 inches, $7; hackmatack, $4.75; oak knees, 8 inches, $10; hackmatack, $7; oak knees, 9 inches, $12; hackmatack, $9; oak knees, 10 inches, $15; hackmatack, $10; oak knees, 10 to 12 inches, $15 to $20; hackmatack, $11 to $12. Locust remains as quoted in November last.

LAUNCHES IN U. S. PAST MONTH.

At Bath, a ship of about 900 tons, called the Mattapan.
At Noank, Conn., a brig of about 300 tons, called the Mystic.
At East Greenwich, clipper schooner John Howard, of about 300 tons.
At Plymouth, recently, a schooner of 350 tons, called the Nathaniel Doane.
At Jonesboro', barque Dublin, 380 tons.
At Wiscasset, from the yard of Messrs. Johnston & Holmes, ship Tamerlane, of 950 tons.
At Freeport, a ship of about 700 tons, not yet named.
At Damariscotta, a barque of about 450 tons.
At Bath, a clipper ship of about 1,500 tons.
At Hampden, a ship of 675 tons, called the Maverick.
December 20, a three-deck freighting ship of about 1,800 tons, called the John Cottle.
December 20th, schooner Ella, 213 tons.
December 22d, ship Clarissa Bird, of about 1,100 tons.
At Jonesboro', from the yard of Capt. Enoch Richardson, barque Dublin, 380 tons.
At Somerset, Mass , from the yard of Messrs. Chase, Smith & Co., a barque of about 500 tons, called the Alma.
At New-York, Jan. 4, from the yard of William H. Webb, ship New-Orleans, 1,000 tons.
At Belfast, from the yard of R. L. Palmer, a ship of about 1,200 tons, called the Western Chief.
At Franklin, Dec. 18, by Messrs. A. Scammon & Co., a barque of 375 tons, called the F. S. Means.
At Baltimore, by Messrs. Goodwin & Co., a three-masted schooner, called the Sugar Stick, for the Louisiana trade.
At Milford, Del., Dec. 27th, a three-masted schooner, called the William and John, of 515 tons.
At East Boston, by Mr. Samuel Hall, a beautiful ship of about 1,200 tons, not yet named.
At same time and place, by Mr. Donald McKay, the clipper ship McKay, of about 3,000 tons, for Messrs. James Baines & Co., of Liverpool.
At Providence, Jan. 3, from the ship-yard of Messrs. McLeod & Salisbury, India Point, a fine barque of about 600 tons, called the W. A. Platincus.
At Bristol, from the yard of Mr. Joseph S. Thompson, a barque of about 400 tons burthen, of the following dimensions:—Length 120 feet, breadth 28 feet, depth 13 feet.
At Chelsea, Mass., a barque of about 300 tons, called the Western Sea, intended for a Boston and Baltimore packet.
At East Boston, clipper ship King Lear.
At Belfast, a ship of about 1,200 tons, called the Western Chief.
At Millbridge, Me , a barque of 598 tons, called the Crusade.
At Bath, by Messrs. Lowell & Small, a ship of 1,200 tons, called the Pleiades.
At Bristol, R. I., Jan. 18, by Mr. Joseph Thompson, a fine barque called the Ocean's Favorite, of 400 tons.
At Newburyport, by Messrs. Currier & Townsend, a superior half-clipper ship, called the Brewster, in honor of one of the editors of the "Newburyport Herald."
At Tremont, a beautiful brig of about 225 tons, called the William H. Heath.
At Greenpoint, L. I., from the ship-yard of Silas S. Hand, Esq., a clipper schooner called the William M. Lodge, of about 200 tons.
At Bridgeport, Conn., a splendid three-masted schooner of about 450 tons, called the Queen of the South.
At Robbinston, Me., a beautiful barque of about 450 tons, called the La Pierre.

REDUCTION OF WAGES IN NEW-YORK.

At an adjourned meeting of the Ship-builders, Shipwrights, Calkers, and Sparmakers of this port, held at the office of W. H. Webb, on Friday evening, 12th inst., the following preamble and resolutions were offered, and unanimously adopted :—

Whereas, At a meeting of the Ship-owners, Merchants, and Ship-builders, held in the Rotunda of the Merchants' Exchange, on Thursday, the 11th ult., sundry resolutions were offered and adopted relating to the existing rate of wages claimed by the operatives in their employ ; and

Whereas, Such resolutions are to the effect that in consequence of the depressed rates of freight to and from Europe, the present rate of wages cannot and ought not to be sustained ; and

Whereas, They, the merchants and ship-owners, have determined that on and after Monday, the 15th ult., they will pay two dollars and a half per day for the services of the ship-carpenters, calkers, and sparmakers employed on their vessels, and *no more* :—Therefore,

Resolved, That we, the employers in the above branches, in accordance with the above resolutions, deem it our duty to notify the workmen in our employ on Saturday evening, 13th ult., that on and after Monday, the 15th ult., the rate of wages will be two and a half dollars per day, and no more.

JOHN DIMON, *President.*

D. D. Westervelt, *Secretary*.

NEW-YORK PRICE CURRENT.

Sheathing Copper, 29½ c. 6 months.
" Metal, 26 c. "
Old Copper, 20 a 21 c.
" Metal, 18 a 19 c.
Composition Nails, assortment, 20 c. 6 months.
" Spikes, 20 c. "
Patent Felt Paper, 4 a 5 c. "
" English Tarred Felt, 6 c. per sheet, 20 × 32 inches.
Copper Bolts, 33½ a 35 c. 6 months.
Yellow Metal " 26 a 28 c. "
Oakum.—Am. Navy, 1st class, 8½ cts.; 2nd class, 8 cts.

To the Patrons of the Nautical Magazine.—With the initiation of the New Year, we have introduced a popular improvement in the appearance of the Nautical, and are determined to make it permanent, if a generous appreciation of public favor comes promptly forward to its support. We allude to the beautiful lithographs which we have given in the present and preceding number. We are firmly determined to render our pages doubly valuable, by adding beauty to utility; and we look confidently to the exertions of our friends to sustain our efforts. Please read our prospectus for the second volume, on the opposite page.

THE

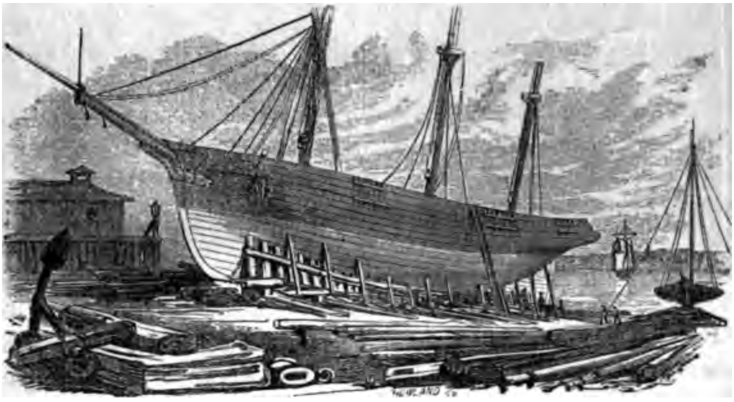
Monthly Nautical Magazine

AND

QUARTERLY REVIEW.

VOL. I.] MARCH, 1855. [No. 6.

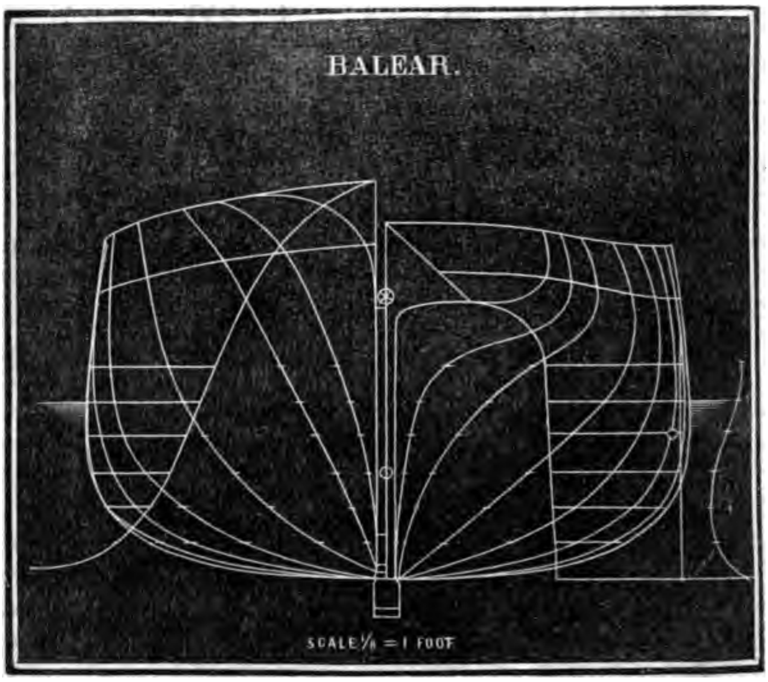
Mechanical Department.



THE CLIPPER BRIG BALEAR.

AMONG the numerous examples of neat and skillful architecture which have come under our notice, in the crowded slips of New-York, the clipper brig *Balear* deserves a prominent place. Although a small vessel of her class, being rigged a hermaphrodite, yet she will compare favorably in point of model, workmanship and finish, with the finest of any port in the United States. It is not often that vessel-owners seek a laudable gratification in embracing the above qualities to any great extent in such small vessels, designed for commercial purposes. Nor is it always the

case, that the finish is found to correspond to the merits of the model, as in the present instance, either on large or smal vessels.



The Balear was built at Green-Point, L. I., New-York, by Edward Lupton, and was launched in December, 1854. She was built for Captain Filletti, of New-York, for the Tampico trade. Upon request, Mr. Lupton has kindly furnished us her tables and particulars; and we have made calculations for the purpose of comparison with other vessels. It will be seen that she is quite sharp, having the longest end forward, and drawing about an even draught of water, loaded. Her angle of dead-rise is moderate, being 2¼ degrees, and yet sufficient for all useful purposes. She is high-deck built, and is pierced for two guns on each side. Being very strongly constructed, and though a small vessel, having hanging-knees under every beam, she is capable of use in the hardest and most daring service, whether in commerce or in war.

DIMENSIONS AND CALCULATIONS.

Length on load-line for calculations	105·30	ft.
Height of do. above base line	7·50	"
Breadth on do.	25·25	"
Breadth, extreme	25·92	"
Launching draught of water forward	5·	"
Do. " " aft	4·	"
Weight of *vessel in* tons gross	100·	
Area of load-water section in square feet	1,912·46	ft.
Exponent of the same	0·72	
Centre of gravity of same, abaft mid-length	2·65	ft.
Area of greatest transverse section	164·	ft.
Exponent of the same	0·86	
Location abaft mid-length	2·31	ft.
Moulded displacement in cubic feet	10,722·	
Do. do. in tons gross	306·34	
Exponent of the same	0·54	
Centre of gravity below load-line	3·04	ft.
Centre of gravity abaft mid-length	1·94	"
Moment of stability at load-line $S\ \frac{1}{3}\ y^3\ dx$	80,159·	
Height of *meta centre* above centre of buoyancy	7·47	ft.

The keel is sided 12 inches, and moulded 15, with a 4 inch shoe. The stem head curves forward under the bowsprit, finishing into the head and shoulders of a carved serpent, of a sea-green color; and is sided 11 inches, and moulded 10 inches at the rail; at the top breadth, 12 inches; at the sixth-water line, 13½ inches; and at light-water line, 18 inches, on a square, being bearded with the lines of the bow. The stern-post is sided 11 inches; siding size of floors from 9 to 10 inches; first futtocks from 8 to 9 inches; second futtocks, 8 inches; top-timbers, 7 inches; and stanchions, 6½ inches, which are of locust. The floors mould 11 inches, at the seat; and the scantling tapers in straight lines to 5½ inches at the gunwale. Mr. Lupton's method of diminishing the moulding size of frame towards the ends of the vessel is after the following manner:—Take a batten, and, bending it to the sweep of dead flat, on the mould loft floor, mark the places of the diagonals and the moulding size of the frame: now apply this batten to the sweep of every fourth frame on the floor, taking care to keep the gunwale mark on it at the same mark on each frame on the floor, and, letting the

lower end of the batten run beyond the throat of the floors—as the distance between the gunwale and that point diminishes towards the ends of the vessel—set off the moulding sizes, beginning at the gunwale. Then sweep a curve, of equal moulding size, through the spots thus obtained in each body, and at its intersection with the frames set off the moulding size. This will be found a very good rule for diminishing the scantling of vessels towards the extremities, and is similar to that given in "Griffiths' Marine and Naval Architecture."

The frames are 26 inches apart from centres. Outside planking is 3 inches thick on the bottom, 3½ inches on the bilge, and 4 inches at the wales—all of oak. Ceiling on the flat of floor, 3 inches thick, of oak; bilge strakes, 6 inches, of hard pine: diminished to the clamps, also of hard pine, and 4 inches in thickness. Beams are of hard pine, 5 feet apart, sided 10 and 11 inches, and moulded 6½ inches at the ends; carlings are 4½ by 5 inches. Berth and hanging-knees are of oak, the former sided 5 inches, and the latter 7 inches. There is a deck breast-hook forward and aft: and one at each end in the hold, with pointers, extending from the fore-foot and heel to the deck beams. The water-ways are sided 11, and moulded 12 inches. Plank-sheer and rail are 4 inches thick; hammock-rail, 2½ inches thick—all of oak. Deck plank are white pine, 3 inches thick.

The main kelson is 20 inches deep, and the sister kelsons are 10 by 12 inches—all of oak—copper-fastened. The outside plank are secured by two locust trenails in each timber, the butts being fastened with composition spikes, and butt-bolts of copper. The cabin is 34 feet long, commencing at five feet forward of the aft side of stern-post, and extending thence to the fife-rail of main-mast. The hammock-rail extends fore and aft, and the deck over cabin is laid flush with the same, forming plank-sheer for the length of cabin. There is a cock-pit deck abaft the cabin, and 4 feet below the top of same, for steering on. The cabin is also entered from this cock-pit deck. This is an improvement upon the old-fashioned poop cabins, inasmuch as it makes the stern light and convenient. A light life-rail, on turned stanchions, about 20 inches above the cabin deck, protects the mariner from danger of slipping overboard. The

cabin, inside, consists of three lengths of state-rooms, on each side, with a pantry on one side and water-closet on the other. This leaves a room of 12 feet in length, and the entire breadth of vessel, forward of cabin, for a steerage, or stowage-room, above deck. There is a forecastle deck forward, coming aft to the windlass, and laid flush with the hammock-rail. This forecastle deck extends aft to within 14 feet of foremast. The main hatch is forward of mainmast, and the fore hatch is abaft the foremast. Between the hatches is situated a house, 20 feet long and 10 feet wide, which is used for galley and forecastle for crew.

The windlass is 20 inches in diameter, worked with patent gear upon the forecastle deck. A capstan is also worked upon this deck; and a gipsey-windlass is fitted to work at the mainmast. All timber heads, hatch combings, chocks, &c., &c., are cornered with finished brass. Iron cleats are used on the forecastle-deck for anchors and sheets. The two pumps are metal.

The rudder-stock is 12 inches in diameter; and the rudder is 3 feet wide at the greatest breadth, 4½ feet up from the bottom. The stern is oval, and tastefully ornamented with rich carved work. Indeed, the *Balear* is finished inside and out in the finest style. Her hold is the best finished we remember ever to have seen. The ceiling is *planed, calked, payed* and *scraped* down to the floor-heads, where a platform is laid fair across at the top of the kelson. The deck-frame and knees are likewise planed, and joinered, and painted with white paint. The clamps and ceiling, being hard pine, are varnished. An air of neatness and comfort may be said to pervade the *hold*, sufficient to gratify even the most fastidious traveller, should circumstances ever require its use for the accommodation of passengers, in which case it would be found sweet and healthy. It would be interesting to learn the owner's notion for so grand a display of taste. We suppose the Balear is intended for a packet, for which she appears remarkably well adapted; and, doubtless, will prove a match, for her length and displacement, for anything that floats commercial waters.

MASTS AND SPARS.

Mainmast: length, 68 feet; head, 8 feet; diameter, 20 inches. Topmast: length, 27 feet: diameter, 9 inches. Topgallant-mast: length, 9 feet; pole, 6 feet—all in one stick. Main-boom, length, 50 feet; diameter, 10½ inches. Gaff: length, 32 feet; diameter, 7 inches.

Foremast: length, 50 feet; head, 9 feet; diameter, 20 inches. Topmast: length, 32 feet: head, 6 feet: diameter, 10 inches. Topgallant-mast: length, 19 feet: royal, 10 feet: pole, 6 feet; 7½ inches diameter. Foreyard, 48 feet: diameter, 11¾ inches. Topsail-yard, 38 feet; diameter, 9½ inches. Topgallant-yard, 28 feet; diameter, 7 inches. Royal-yard, 20 feet; diameter, 5 inches. Bowsprit, outboard from bed, at a point 30 feet forward of foremast, is 18 feet; diameter. 20 inches (square.) Jibboom: length, 13 feet; flying-jibboom, 10 feet; pole, 4 feet; 10½ inehes diameter. Rake of bowsprit, 3 inches to the foot; of foremast, 1½ inches; of mainmast, 1¾ inches, to the foot. Centre of foremast is 25 feet 4 inches forward of dead-flat frame, at the deck. Centre of mainmast is 14 feet 8 inches abaft of dead-flat frame, at the deck. It will be remembered that dead-flat frame is located 2 feet 3 inches and six-eighths abaft the mid-length of load-line.

We have not space in the present number to give the draft of sail, with calculations.

TONNAGE REFORM.—We have received several letters from correspondents upon this subject, which we cannot make room for in this number. Our suggestion, to have a committee appointed by Congress to thoroughly investigate this most important subject, and report a new tonnage law at the next session, meets with general favor. If Congress shall see fit to carry out this measure promptly, it is not unlikely that we shall still be able to unite the deliberations of our shipbuilders and merchants with those of Great Britain, where a similar committee has had the subject under consideration in that country, and, perhaps, agree upon the basis of an international tonnage law at one and the same time. During the past year we have had frequent correspondence with a member of the British committee, in London, and feel assured our English friends would be pleased to confer upon the proposed reform, and, if possible, arrive at the same grand result.

A *just* and *uniform* admensuration of vessels has now become second in importance to no other question of maritime economy. The progress of ship-building is arrested by the inquiry, *how shall we measure shipping*? The great object of a revision of our tonnage code is to adopt a *just* and *uniform* formula of admeasurement, which shall apply equally well to every description of vessel—to *every* kind of *model*—to every *manner* of *construction*—to every *mode* of *propulsion*: placing *all* upon an *equal footing*; so that the problem to be solved by the genius of American ship-builders may be: what is the *best model* and *mode* of *propulsion* for the *trade* and *cargo* required?

For the Nautical Magazine.

THE IMPORTANCE OF FASTENING SHIPS THOROUGHLY.

EDITORS NAUTICAL MAGAZINE:—

A noble ship, constructed scientifically, seems to me to be most like a ship, as ideality conceives it. A perfect ship—what a structure!—a child can turn her on her course; touch the helm, and she obeys instantly. Could I take time, I would like to write you much of ships and ship-building, and the proper fastening in all their parts; for I do know that all ships built in this country are not *bolted*, and *nailed*, and *screwed* together, as they should be. How much would be saved by insurance offices, (and what the insurance loses is national loss,) were a law passed which would compel ship-builders to put, at least, a certain quantity of *fastenings*, and all *sound* timber, into a ship. I have seen ships built with the nails and bolts, especially if required of copper, so "few and far between," that a pack of hounds, in full cry, would only occasionally get on the true scent, or trail, of a copper bolt or nail. I am of the opinion that the NAUTICAL MAGAZINE should give the Insurance Companies a hint, and a broad one, too, upon the propriety of appointing *mechanics*, of ability, to look after the materials of the ships building in this country. I have known captains of vessels appointed to supervise the construction of ships, many of whom cannot tell sap-wood from heart-wood. Ship-masters will know their duty better on deck, looking after the rigging, sparring, and fitting out, which is more in their line of duty. I hold that even Capt. West, of the noble Steamer Atlantic, a gentleman of superior worth as a navigator, or seaman, and as fine a citizen and commander as our glorious country can boast, cannot be compared to any intelligent ship-carpenter to superintend the construction of ships, especially when the best mechanics of the United States could be engaged for this important service. Long experience in these matters has fixed this impression upon my mind, viz.: that marine insurance companies would be vastly relieved from the losses of shipwreck were they to employ, in each port of the United States, some competent mechanic to give them information how each new vessel is fastened, and what kind of timber enters into her construction.

Yours truly,

ECKFORD.

[Our correspondent has touched a very important point in maritime economy, and his remarks might have been continued to the advantage of our readers. The safety of ships begins with the model, and next rests with the construction; and culminates in the application of propulsory power, and the management at sea.—EDS. N. M.]

TABLE

EXHIBITING the weight in pounds of twenty-four pieces of WHITE OAK, one-half of which were hewn to sharp corners, and one-half in the round *in bark*, all kept under cover and unprepared. The Table shows the cubic contents of each piece in feet and inches; the specific gravity of each piece; the time *when felled*. In each line can be seen the cubic contents and specific gravity. Under the months *felled* is the weight of each piece in the *green tree*, say about eight days from the time of felling. The Table shows the weight of the pieces each month in one year; the loss of weight by evaporation for one year, and the whole loss of weight of each piece for four years. Fractions of inches and ounces are not noticed.

Cubic Feet and Inches in each Piece.		Specific Gravity of Pieces.	Square and Round Pieces.	FELLED THE 15TH OF THE FOLLOWING MONTHS.																							Weight of each Piece at the end of four years.	Loss of weight by evaporation per cubic ft. for one year.		Loss of weight of each piece in one year.	Loss of weight of each piece in four years.
				Sept., 1849.	Oct., 1849.	Nov., 1849.	Dec., 1849.	Jan., 1850.	Feb., 1850.	Mch., 1850.	April, 1850.	May, 1850.	June, 1850.	July, 1850.	Aug., 1850.	Sept., 1850.	Oct., 1850.	Nov., 1850.	Dec., 1850.	Jan., 1851.	Feb., 1851.	Mch., 1851.	Apl., 1851.	May, 1851.	June, 1851.	July, 1851.					
Feet.	In.																										Pounds.	lbs.	oz.	Pounds.	Pounds.
3	3	1085	Square.	220	216	208	204	202	199	194	189	186	183	181	180												161	12	4	40	59
3	5	1110	"		235	224	219	217	213	209	205	199	197	196	194	193											177	12	5	42	58
3	4	1070	"			223	215	212	209	206	204	201	198	195	193	190	189										165	10	3	34	58
1	10	1099	"				124	119	115	111	108	105	103	101	98	97	96	96									88	15	4	28	36
1	6	1010	"					95	89	85	82	80	78	76	75	74	74	73	72								68	15	5	23	27
1	6	1106	"						102	97	93	91	89	88	88	87	86	85	84	83							77	12	10	19	25
1	6	1049	"							97	94	90	88	87	86	85	83	81	80	80	79						74	12	0	18	23
1	7	1076	"								109	101	96	94	92	90	90	89	89	88	88	87					83	13	14	22	26
1	7	1087	"									107	99	96	94	92	91	90	89	89	88	87	86				82	13	4	21	25
1	6	1058	"										101	90	87	84	84	82	81	80	80	80	77	76			70	16	10	25	31
1	6	1122	"											104	95	91	90	88	87	87	87	86	85	83	82		76	14	10	22	28
1	7	1067	"												105	95	93	89	88	87	87	86	83	81	80	80	70	15	12	25	35
2	7	.961	Round in Bark.	153	150	148	146	144	142	140	137	135	133	130	130												109	8	14	23	44
2	5	.965	"		148	145	142	140	137	134	133	133	131	130	129	128											114	8	4	20	34
2	4	1029	"			149	147	145	143	139	138	135	131	120	127	125	125										112	10	4	24	37
3	1	1052	"				204	201	197	193	189	186	179	177	175	170	168	168									145	11	10	36	59
3	6	1027	"					226	222	218	214	211	208	202	199	196	192	189	187								163	11	2	39	63
2	9	1031	"						176	159	156	154	151	149	147	145	145	144	143	142							128	12	5	34	48
3	8	1115	"							255	244	235	231	228	224	222	222	219	218	217	217						192	10	5	38	63
4	1	1041	"								265	246	235	230	225	222	221	219	217	216	216	215					188	12	3	50	77
2	9	1019	"									174	162	157	154	151	148	146	144	142	141	138	136				113	13	13	38	61
3	5	1093	"										231	212	205	200	199	195	192	190	189	189	189	187			158	12	14	44	73
3	7	1081	"											241	226	221	219	215	212	210	210	210	207	205	203		171	10	9	38	70
3	3	1032	"												212	197	195	189	186	186	185	185	182	180	178	176	132	11	1	36	80

In the Table there are frequent seeming discrepancies. The whole number of pieces kept dry were weighed by three reliable men. Whenever there happened a great difference in the weight of pieces, they were again weighed, and the balance scales examined. When a piece weighed 144 pounds 5 ounces, it was called 144 pounds; and when a piece measured 2 cubic feet, 9 inches and 6 parts of an inch, it was called 2 cubic feet, 9 inches. Hence the discrepancy in the computation.

TABLE

EXHIBITING the weight in pounds of twenty-four pieces of YELLOW PINE, one-half of which were hewn to sharp corners, and one-half in the *round in bark*, all kept under cover and unprepared. The Tal
shows the cubic contents of each piece, in feet and inches; the specific gravity of each piece; the time when felled. In each line can be seen the cubic contents and specific gravity. Under t
month felled is the weight of each piece in the *green tree*, say about eight days from the time of felling. The Table shows the weight of the pieces each month in one year; the loss of weight by ev
poration for one year, and the whole loss of weight of each piece for four years. Fractions of inches and ounces are not noticed.

Cubic Feet and inches in each piece.	Specific gravity of pieces.	Square and round pieces.	FELLED THE 15TH OF THE FOLLOWING MONTHS.																							Weight of each piece at the end of four years.	Loss of weight by evaporation per cubic ft. for one year.	Loss of weight of each piece in one year.	Loss of weight of each piece in four years.
			Sept., 1849.	Oct., 1849.	Nov., 1849.	Dec., 1849.	Jan., 1850.	Feb., 1850.	Mch., 1850.	April, 1850.	May, 1850.	June, 1850.	July, 1850.	Aug., 1850.	Sept., 1850.	Oct., 1850.	Nov., 1850.	Dec., 1850.	Jan., 1851.	Feb., 1851.	Mch., 1851.	April, 1851.	May, 1851.	June, 1851.	July, 1851.				
Feet. In.																										Pounds.	lbs. oz.	Pounds.	Pounds.
2 7	.641	Square.	104	103	102	102	102	101	100	99	98	97	97	97												93	2 11	7	11
1 9	.663	"		73	70	69	68	67	65	65	65	64	64	63	63											63	5 15	10	10
1 8	.588	"			63	61	60	59	57	56	56	55	55	55	55	55										54	4 12	8	9
1 7	.632	"				64	63	62	59	58	58	57	56	55	55	55	55									54	5 11	9	10
1 6	.620	"					61	58	56	55	55	54	53	53	53	53	53	53								52	5 5	8	9
1 7	.579	"						57	54	53	52	50	50	50	49	49	49	49	49							48	5 1	8	9
1 7	.533	"							54	50	48	47	46	45	45	45	44	44	44	44						43	6 5	10	11
1 5	.657	"								59	56	55	55	54	53	52	52	52	52	52	52					51	4 15	7	8
1 6	.674	"									62	57	56	55	55	55	55	54	54	54	54	54				53	5 5	8	9
1 6	.573	"										54	51	49	49	49	49	49	48	48	48	48	48			47	4 0	6	7
1 6	.681	"											65	62	61	61	60	60	60	60	60	59	59	58		57	4 10	7	8
1 8	.603	"												62	57	56	55	54	53	52	52	52	52	52	52	51	6 0	10	11
2 9	.761	Round in Bark.	132	130	128	126	124	122	119	117	114	111	108	107												91	9 1	25	41
2 9	.847	"		147	144	142	140	138	134	130	126	122	118	114	113											83	12 5	34	64
3 8	.726	"			166	160	159	158	155	150	148	146	143	142	140	138										124	7 10	28	42
2 9	.737	"				128	126	123	121	118	116	113	111	109	107	105	104									90	8 11	24	38
2 11	.850	"					155	151	149	146	143	139	136	133	129	128	128	127								117	9 9	28	38
3 4	.754	"						157	150	146	142	138	134	130	128	127	125	123	122							105	10 8	35	52
3 9	.844	"							198	192	190	187	184	181	177	173	170	169	166	164						140	9 7	34	58
4 0	.830	"								209	198	189	184	180	176	176	172	172	171	171	171					160	9 8	38	49
2 9	.814	"									130	133	132	128	125	125	122	121	120	119	119	118				96	7 10	21	43
2 6	.704	"										110	105	102	99	99	97	95	94	94	93	91	90			84	8 0	20	26
3 0	.750	"											139	133	131	129	127	124	122	121	120	119	118	117		86	7 5	22	53
3 7	.694	"												157	148	147	145	143	142	141	140	139	138	137	136	127	5 13	21	30

In the Tables there are frequent seeming discrepancies. The whole number of pieces *kept dry* were weighed by three reliable men. Whenever there happened a great difference in the weight
pieces they were again weighed, and the balance scales examined. When a piece weighed 103 pounds 9 ounces, it was called 104 pounds; and when a piece *measured* 2 cubic feet, 9 inches and 3 parts, it w
called 2 cubic feet, 9 inches. Hence the discrepancy in the computation.

REMARKS.—If we contrast the tables of specific gravities as furnished us by standard authors of other countries, with those compiled by Mr. Jarvis, by order of the Navy Department, for the NAUTICAL MAGAZINE, we shall be able to approximate their importance to the mechanical world. The invariable practice has been, to give the specific gravity without reference to the time or season when the timber was felled, or how long it had been cut or prepared when the specific gravity was taken, or whether it was taken with or without the sap-wood. There were about 650 different specimens of wood, from nearly all parts of the world, exhibited at the Exhibition in London, in 1851, aside from D. Wallich's collection, which consisted of 450 specimens, not one of all these had the least reference to the difference of time between the cutting and weighing, or to the loss, in any given time, by evaporation; and, as a consequence, little is known beyond the names, colors, and countries where grown, of the greatest exhibition in this department of the vegetable kingdom the world ever witnessed. We say, and (with Mr. Jarvis's tables before us) without fear of successful contradiction, that there are no other tables of specific gravity worthy of a name! What do we know of the proper season for cutting timber, either for durability or for strength, aside from the important supplement Mr. Jarvis has furnished? We say, just nothing. With the facts as already stated before us, we may readily account for the very small amount of knowledge the people of England possess of the American forest growth, which, in variety and extent, exceeds that of all Europe; but a limited proportion of which was exhibited at London. Even the Lloyds, who are supposed, through their surveyors, to know all that is worth possessing in relation to the kinds and qualities of ship-timber, have not yet learned the fact, that much of the white oak of the Middle States is more dense, and under the same treatment, more durable than English oak. It has been their continued practice to recognize the white oak of the United States as only commensurate, in strength and durability, with that of British America, and, as a consequence, American oak, for the frames of ships, cannot take the higher grades in their classification; and what is still worse, we see ship-owners

sending their ships, built in the Middle States, of timber equal, if not superior oak to that of English, to Quebec for classification ; but we should not be unmindful that the Lloyds have consented to allow *live oak* to find a place in their classification for the highest grade. But what is most singular, is that English oak is set down at the head of the list with a specific gravity of only .624, while the lowest specific gravity of the Virginia white oak, out of 24 pieces shown by Mr. Jarvis's tables, = .961 when in the green state, and, as shown in Griffiths' Treatise on Ship-Building to be, .759 after being cut twenty years. Thus we may be able to discover, that it is because there are no proper tables of specific gravity, that much error exists in relation to the strength and durability of the forest growth, particularly in the United States. In the examination of these tables we find much to instruct, and discover the wisdom in preparing the pieces of different dimensions, in order that the relative difference may be known in the process of evaporation, without which, our deductions would not be reliable. The tables cannot fail to be invaluable in their application to the timber grown in the districts represented, and we would suggest the propriety of extending the investigations to the oak of the entire seaboard, and, indeed, to all the white oak used in ship-building in the United States, as well as to white pine; and when this is accomplished, we need not be subjected to the chagrin consequent upon the discovery that our computation of the displacement required to compensate a determined weight, whether in vessels, or other floating, as well as stationary fabrics, is at fault, consequent upon the unknown specific gravity of the materials used in their construction. Our space forbids our enlarging upon this unexplored department of mechanical science; but we cannot lay down our pen without calling the especial attention of our readers to the tables of yellow pine. It is only necessary to compare the specific gravity of yellow pine in bark, with that which has been squared and the sap removed, from the *same tree*, to discover that the sap-wood of yellow pine is but a *vegetable sponge*, which absorbs moisture, is without strength, and generates decay: hence, we say, better have *wane* than *sap*, and

if we cannot secure that which we require without sap, remove the sap and leave the wane. As these tables form but one department of these experiments, they will be continued in the next volume, in connection with our remarks.

For the Nautical Magazine.

NAVAL IMPROVEMENT—THE OLD AND THE NEW SHIP CONSTELLATION.

Dear Editors:—Having an idea that you would be interested in a brief account of the old and new "Constellation," which has just been completed in reconstruction at the Gosport Navy Yard, I have compiled from the papers of this place the following. It may be well to premise that no doubt exists of the correctness of the dimensions of the new Constellation, and little, if any, of the old ship.

DIMENSIONS.

	Old Constellation. FEET.	New Constellation. FEET.
Length between perpendiculars	164.00	176.00
Beam moulded	40.06	41.00
Hold to gun-deck	19.06	21.13
Length on load-line	162.00	176.00

The new Constellation mounts two 10-inch pivot guns on her spar-deck. On her gun-deck she carries sixteen 68-pounders. She is now a perfect ship, in my opinion.

The old Constellation was built in Baltimore, in 1798–99, by Mr. Stoddard, then Naval Constructor. Her first masts were in one piece *each.* They were felled in Princess Ann, Va. Such pieces of yellow pine are few and far between, now-a-days. In 1800, while cruising in the West Indies, near St. Kitts, she captured the French Frigate, *La Insurgente*, and sent her into Norfolk. Capt. Thomas Truxton, who was the gallant commander of the Constellation, soon after engaged another French ship, larger than the La Insurgente, and crippled her; and would have captured her, but by some means the enemy effected his escape. Truxton was brave, noble and generous—everlasting happiness to his departed spirit.

During the late war with Great Britain, the old Constellation was home, at the naval anchorage between Fort Norfolk and Fort Nelson, during the entire period of the war. At the battle of "Craney Island," her officers, Lieuts. Niele, Shubrick, and Saunders, commanded the gallant seamen on the 22d June, 1813, in defence of that place. I am not certain, but I think Lieuts. Niele and Saunders were afterwards both lost at sea. Lieut. Shubrick, who behaved so nobly at the Island on that eventful day, is none

other than the present Commodore Shubrick. The toast used to be, "the Constellation and her crew of brave Yankee boys."

I perceive there is talk of building six or seven sloops-of-war, under the recommendation of the Hon. Secretary of the Navy. I believe the Secretary means, if he can, to go ahead with the Navy—I *know he is right.* The sloops are wanted. The construction of the six screw frigates, now under way, has caused the selection of the largest live oak timber, at all the yards where they are in progress, for their use, which leaves a large quantity of smaller timber, just suitable for that number of sloops-of-war. Six or seven swift steamers might also be built, inasmuch as they are equally wanted; so the Hon. Secretary has told the Government, and that should be sufficient.

Yours truly,

"Craney Island."

SURF-BOATS, FOR WRECKING, OR SAVING LIFE.

We have been favored with the following communication, respecting the theory and practice of constructing surf-boats; and, inasmuch as we appreciate the good judgment and practical knowledge of the writer as a sufficient guarantee for the value of his suggestions, we recommend them to the readers of the Nautical Magazine:—

New-York, 1854.

Editors of the Nautical Magazine:—

Gents:—I send you a draft and tables of a surf-boat, to be used in saving life, or working at wrecked vessels, on our coast.

Having had considerable experience in boating to and from wrecked vessels for many years, I feel warranted in sending you this, as the *best* model for the purpose; combining, as it does—in my judgment—all the essential points of perfection, viz.: safety, lightness, buoyancy, velocity, and most important of all, the quality of safely running on, or leaving the beach in a heavy surf. The superiority of this over most other boats in the last named purpose—beaching, or leaving the beach—is found in the model, which is flat on the bottom, and curving up at both ends, with a high bow and stern.

In beaching a boat, it frequently occurs that the boat strikes the beach far below the point to which the sea runs, and as the following sea rushes on very fast, there is no time to get the boat out of its way, but by keeping it stern-to, laying, as it were, upon a pivot amidships, so that the following sea easily lifts the stern and carries her further up, upon the beach; or, as

she lays upon a pivot, she can, in a moment, be turned head to the surf, and carried up stern foremost, without having the sea break into her. A boat which is built straight on the keel, laying flat on the beach, has no ability to rise before the sea breaks into her, fills, and, in all probability, capsizes her upon the crew. The curvature of the bottom provides against all this; for, thus, the boat lays upon the middle of the bottom, with the ends free from the beach, and will tip, or swing, upon the application of the least force. Boats built upon this principle are not easily capsized, being low amidships, and high forward and aft. It is a wrong idea that boats require to be built high amidships; for, in this case, they are the more easily capsized. This is accounted for in this wise: if the boat is high amidships, the centre of gravity being there also, the wave thus furnished with an increased lifting surface, more easily turns the boat; whereas, the greater height at the ends, when struck by the wave, only causes the boat to swing, but not to capsize.

In most cases, in beaching a boat, it is necessary to keep her head on, for as soon as you enter upon a sea, all depends on the steering oar (all the rest are useless) to keep her straight, and this is more easily done when the bottom of the boat is curved up at both ends, which, as we said before, facilitates the turning around, to avoid danger.

The following dimensions and tables are taken from a boat built at Squam, and is the one which I consider the best on our coast:—

Dimensions.—Extreme length, 30 feet; breath, 8 feet; depth, 2⅓ feet.

Tables.—The sections are laid off in spaces of five feet, beginning at the stern, on a straight base line, and may be marked thus:—

	1	2	3	4	5	STEM.
Breadth of beam......	5 ft. 10 in.	7 ft. 2 in.	8 ft.	6 ft. 10 in.	3 ft. 9 in.	2 in.
Breadth of floor.......	1 " 3 "	2 " 9 "	3 " 6 in.	2 " 4 "	3 "	
Height of gunwale....	2 " 7 "	2 " 4 "	2 " 4 "	2 " 5 "	2 " 6 "	

Rake of stern, 2 feet; rake of stem, 3 feet. The stern to be 4 feet wide. The stem rakes 3 feet, and the stern 2 feet. The bottom plank curves up 10 inches at the stem and 9 inches at the stern, and the height of gunwale in the table is measured from the bottom, and not from the base line. The bottom is 25 feet long, and is shaped to a point at both ends. Bottom plank to be two inches thick. The gunwale to be 3 inches square, of oak; strings also of oak, 2 by 3 inches. Thwarts 1½ inches thick and one foot wide. Breasthooks in the bow, and quarter-knees aft. The forward *third*, and *sixth* thwarts, to be stationary, and kneed. The second, fourth and fifth, from the bow, to unship occasionally. The bottom boards to be of cedar, lapped 1½ inches, the edge planed down to ¼ inch in thickness. Wood ends to be fastened to the apron, so as to prevent them starting from the effects of a glancing stroke of the stem on the beach—all well fastened with copper. To be fitted with *two air-tight tanks*, one in each end, with *cork*

fenders around the sides. This boat to pull six oars single, or ten if double banked.

These dimensions are for a boat adapted to carrying steam pumps and boilers to a wreck, or for boating cargo. For a light, handy boat, I would prefer one of the same length, depth, and breadth of stern, but only 7 feet beam amidships, built of lighter scantling and materials. Cedar is the best for planking. Francis' metallic boats are the best for heavy work and durability, but they are of little or no use as surf-boats, owing to their model, which does not embrace the principles above elucidated.

Yours truly,

AN EXPERIENCED WRECKER.

A QUEBEC SHIP—THE "FANNY FORSYTHE."

IT will be seen that we are indebted to a Quebec ship-builder for the following brief account of the "Fanny Forsythe," built at that port the past season, by our correspondent, although he has omitted to name that fact. We have already given a description of the ship "Tudor," page 87, built at Quebec, from a New-York model, furnished by the senior editor.

Having examined our report of the fine sailing and carrying qualities of the "Tudor," our correspondent is led to make the strange remark, that "ships built off New-York models would not carry freight enough from *here* [Quebec] to realize the expense that would accrue for the run to England. I judge from your report of the ship '*Tudor,*' built here off a New-York model. This vessel only carries 58 feet to the ton, o. m., [old measurement.] To make up this quantity, she had 179 loads *on deck.*" He goes on to add: "The ship 'Fanny Forsythe,' 1,500 tons, built here last year, carries 74 feet to the ton, o. m., [old measurement.] This ship left here [Quebec] the 4th of August, and arrived at the Brunswick Dock, Liverpool, on the morning of the 19th, making the run in 14 days." This is, indeed, a great cargo, and a fine performance.

We will now give the particulars of this vessel, contained in the following letter:—

QUEBEC, 27*th Jan.*, 1855.

MESSRS. GRIFFITHS & BATES:

DEAR SIRS,—I have your letter of the 12th, and am glad to see that it is your determination to exhibit with fairness the qualities which each vessel

possesses, which will, no doubt, give encouragement for all kinds of improvement; and I will, with pleasure, let you have the particulars you ask for, except the log: this I have not in my possession; I have only the captain's report. The dimensions of the "Fanny Forsythe" are as follows:

Length of keel	205 feet.
Length on deck	211 feet.
Extreme breadth, after planked	40 feet.
Depth of hold	22 feet 9 inches.
Loaded draught of water, aft	21 feet 9 inches.
Loaded draught of water, forward	21 feet.

CARGO—2,100 loads of lumber, and 130 tons of staves, in bolts.

[TONNAGE—by old measurement, 1,490; and by new measurement, 1,497 tons.]

MODEL—Below light water-line of flotation, sharp, having an entrance of 59 feet, and run of 90 feet, leaving about 56 to 60 feet amidships; built off one and the same mould, in order to take the ground easily, in case of need. Rise of dead-flat floor, from the base, 5·85, [which we interpret to mean 5 in. and seven-eighths dead-rise.] The foremast is placed 49 feet from the forward perpendicular; mainmast from foremast, 80 feet; mizzenmast from mainmast, 49 feet, or from sternpost, 33 feet. Mainmast in length, from deck to hounds, 54 feet; maintop-mast, 44 feet; maintopgallant-mast, 25 feet; royal-mast, 17 feet; main-yard, extreme length, 80 feet—all other masts and yards in the same proportion.

The "Fanny Forsythe" was built under Lloyd's surveyor's inspection, to class A 1 for seven years, being the highest grade that can be built here. All ships built for sale should be built under inspection. If any builder should do otherwise, or put the inspector at defiance, he would only punish himself by losing one or more years off the class that he intended his ship for; and each year off is not less than 10*s*. ($2) per ton off the price sold for.

Yours, &c.,

THOS. H. OLIVER.

Such is the brief outline furnished in relation to the ship "Fanny Forsythe." We would have been pleased to have been put in possession of the *tables* of this vessel, from which to compute the *displacement*, and compare that with the displacement of the "Tudor," as a basis for a correct comparison of the *carrying* abilities, and also of the sailing qualities, of the two vessels. On reflection, our correspondent will perceive that the superiority which he claims for the Quebec model is apparent, and not real. It will be observed, that the tonnage of the

"Tudor" is set down as follows: old measurement, 1,847 tons; new measurement, 1,648 tons. Difference between *old* and *new* measurement, 199 tons; while this difference is but 7 tons, in the case of the "Fanny Forsythe." Why does Mr. Oliver take *old* measurement for the standard of comparison? If he will make it by *new* measurement, he will find it to show 65 cubic feet, per ton, instead of 58, in the case of the "Tudor;" while it will appear a trifle less than 74 feet for his own ship. Again, let him convert the "Fanny Forsythe's" cargo into tons weight, which is equal to 1,797 tons gross; then it will stand thus:—the "Tudor," *new* measurement, = 1,648 tons; her cargo, = 1,707 tons. The "Fanny Forsythe," *new* measurement, = 1,497; her cargo, = 1,797 tons.

We take it for granted that new measurement, more nearly than old, approximates the displacement for cargo, and consequently furnishes the more accurate standard for comparison in the carrying abilities of vessels. But there is not, and never can be formed, any arbitrary formula based upon principal dimensions, whether taken at *one* or *four* places, inside or outside of a ship, that will correctly exhibit the buoyant capacity of vessels, of every variety of model. Nothing short of the *displacement*, itself, in every instance, can possibly show the burthen of a vessel. We may deceive ourselves, as much as we please, by any of the tonnage systems in vogue among commercial nations, but let us rest assured that nothing is gained by such folly; on the contrary, the consequences may be seen in a mistaken desire to cramp the dimensions, and hamper the sea-going qualities of shipping, by filling out every part of the model, until the minimum only of human intelligence can be discovered in the shape of the ungainly, avaricious hulk. It is an erroneous assumption, that vessels should carry cargoes in proportion to tonnage, as now computed. They should carry in proportion to the *entire displacement*, when it will at once be seen that the ship-builder's problem becomes a higher and more scientific one, viz., to furnish the shipowner with the lightest, strongest, swiftest, most durable, and cheapest navigated vessel, *of a given displacement.* It must never be forgotten, that it is the *buoyancy* which carries; and it makes no difference whether the principal dimen-

sions be large or small, if the entire displacement is the same in several vessels, they are manifestly of the *same size;* and the one of the least weight, most strength, highest speed, greatest durability, and furnished with the cheapest and most efficient propelling power, will prove the most profitable vessel of all, with good management on the part of owners and master.

By reference to the weight of cargoes carried, it will be seen that the "Fanny Forsythe" is the larger vessel, (supposing both to have been equally laden ;) and, at first sight, it might appear the more profitable one. But, by the aid of *figures*—those most expressive characters—we are able to extend our investigations beneath the surface of things. We have reliable information from other correspondents in Quebec, giving the names of ships that sailed in company with the "Tudor," on her first voyage to Liverpool, one of which was the ship "Napoleon III.," a sister ship of the "Fanny Forsythe," built by the same moulds, at the same time, and by the same builder, in the same yard.

The "Tudor" beat this ship about five days time in the passage, which is equal to about one quarter saved in *time*, in wear and tear, and in risk, by exposure to the dangers of the sea. With the ship, and her performance before her purchasers, the "Tudor" found a ready market at ten pound ten shillings, sterling, per ton. No bad indication of mercantile appreciation, surely; and in spite of an erroneous philosophy, hitherto in favor of tardy carrying ships, it is by no means certain that such will ever hereafter bring the builder a price per ton much above the comparative correspondence of performance ; or, in other words, the day is coming, if not at hand, when the value of tonnage—all other conditions being equal—will rate according to *performance*. Indeed, it would not be irrelevant to instance the fact, that none of our fast, or clipper ships, are to be seen laid up during the present depression of freights and business.

BATES.

SHAVED TREENAIL WEDGES.—We have received samples of a superior machine-shaved treenail wedge, from Geo. C. Jones, of Alna, Lincoln county, Me. Being made *with the grain*, they will drive without crippling; and are, without doubt, preferable to sawed wedges, on this account.

LAUNCH OF THE UNITED STATES FRIGATE SABINE, FROM THE BROOKLYN NAVY YARD.

The launch of this frigate drew an immense concourse of spectators to witness it, on the morning of February 3d. With the usual precaution and elaborate preparation for occasions of this kind, as practiced in the Navy Yards of the United States, the launch came off in fine style. It may not be uninteresting to note the manner of laying the ways and executing the launch.

The ground-ways were laid as usual, having a ribband on the outside, and thoroughly shored. A staging was erected at about the height of the ground-way, corresponding with the inclination of the same, running fore and aft, for the carpenters to work upon. The sliding-way being brought on and secured, the heels of the poppets were fitted upon a stringer, laid fore and aft upon the sliding-way, between which the wedges were driven. At the ends of the vessel, cable chains, properly crossed and set taut, were passed under the keel from the ribband boxed, into the poppets. Lashings of Manilla rope were also passed from the cradle on each side under the keel amidships, in several places. The wedges used were large and long, and were driven by a hand-ram, manned by *six* men each. The "hands" were as plenty as bees around a hive; and all appeared delighted that the frigate of *thirty-two* years' construction should descend to her element at last.

The Sabine was begun on the 12th of February, 1823, put in frame and partially completed, when work was suspended. During the threatened difficulties with France, under President Jackson's administration, it was recommenced, but continued only for a few weeks. Nothing further was done until the 15th of May, 1854, when orders were received from the Navy Department for her completion. During the long interval she had remained upon the stocks, the tooth of time had been making havoc of her timbers, and her globular model had grown obsolete. Her keel was replaced by a new one. All defective parts were removed, and twenty feet were added to the length of *fore body*, by cutting off twenty-five, and adding forty-five feet. The bow is thus rendered tolerably fair for speed without de-

parting too far from a correspondence with the other parts of the vessel. But the stern is still an eye-sore above light water-line. Whatever she may prove in the chase, or at broadsides, when discretion becomes the better part of valor, she will present to the enemy decidedly an *ugly look.*

The dimensions of the Sabine are, now: length over all, 206 feet; length of keel, 180 feet; breadth of beam, 47 feet; depth of hold, 29 feet; tonnage, 2,046, government measure. Her armament will consist of ten 8-inch 63 cwt. shell-guns, and twenty 32-pounders, 57 cwt., on her gun-deck; and sixteen 32-pounders, 33 cwt., and two 8-inch pivot guns, 12,000 pounds each, on her spar-deck. Her crew, when in commission, including officers, seamen, landsmen, boys and marines, will consist of 475, all told. The completion of the Sabine has been conducted by B F. Delano, Esq., Naval Constructor.

We improved the opportunity, with no little satisfaction, to take a glance at the Screw Steam Frigate Niagara, in rapid course of construction by George Steers, Esq., now Naval Constructor. The fore body and cants are now raised, and the after body also well under way. We hope to be able, at a future time, to give our readers the full particulars of this vessel, and therefore will not now attempt it. It is sufficient to say, that the model appears to be one of the sharpest and finest ever yet put up for a sea steamer in this country. With a proper adjustment of propelling power, we shall expect that the United States will yet be able to boast of one of the fleetest frigates afloat.

Rule for Computing Tonnage in the United States.—From the length on deck, taken from the aft-side of stern-post to the fore-side of stem, subtract three-fifths the breadth of beam, measured at the widest place above the main wales, and call this the length for tonnage; which multiply by the breadth, obtained as described, and that product by *half* the said breadth of beam, (as this proportion is *assumed to be equal* to the depth of hold,) divide the product by 95, and the quotient is the answer in tons. For single-decked vessels, the computation is the same, except that the actual depth of hold is taken at the main hatch, from the ceiling to the top of beam, and used instead of the half breadth.

REPAIRING WITHOUT DOCKING.

New Method of Repairing a Ship.—The British Screw Steamship Himalaya was lately seriously damaged in the Black Sea, but being considered in a fit condition to carry invalids to England, was despatched thence. On her arrival at Malta, however, it was not thought prudent to continue the voyage without repairs. As there was no dry dock large enough there to contain her, Rear Admiral Stewart, with the assistance of the engineers and shipwrights of the dock-yard, and the steamer's engineers, surmounted the difficulty in the following manner:—

She was taken to the dock about noon, on the first of December. Her fore compartment was filled, or kept filling, by four siphons, for about two hours. At that time a powerful purchase was fixed aft to four derricks, hove taut, and she started up 18 inches. Three hours later the purchase was hove again, when she moved up 12 inches, and so continued until half past 11, P. M., when it was found her shaft hole was 15 inches out of the water. At this time her immersion was 7 feet 10 inches aft, and 27 feet forward, with about 2 feet of water under her fore foot; and this was accomplished so easily that persons witnessing the operation almost doubted their own eyes. She strained nothing whatever, and when her defects had been made good she was let down, the water in her fore compartment pumped out, and in twelve hours she regained her natural position, and looked as trim on the water as she ever did—that is, after she got her mizzen-mast in, top-gallants pointed, yards squared, &c. It will be seen that she was water-borne the whole time, and that, by destroying the buoyancy forward, the assistance she required aft to raise her was comparatively small.—*Exchange.*

The Himalaya is an iron vessel, and is constructed on the life-boat principle, with an iron kelson and transverse bulkheads; and we have no hesitation in saying, that the same operation could not be performed on a wooden vessel, unless constructed with iron kelsons, or longitudinal iron bulkheads, inasmuch as any wooden vessel would be found deficient in longitudinal strength for such operation.

The U. S. Ship of the Line Delaware was launched in 1820, and it was known, immediately after being launched, that a portion of her copper was accidentally removed from her bilge. There being no government dry-dock at that time, the ship was allowed to remain in that condition, at the Gosport Navy-Yard, until orders came to fit her for sea; when, in order to make her outfit as complete below as above water, Mr. Broadie, the foreman of the yard, proposed and obtained leave to make a box, with open top

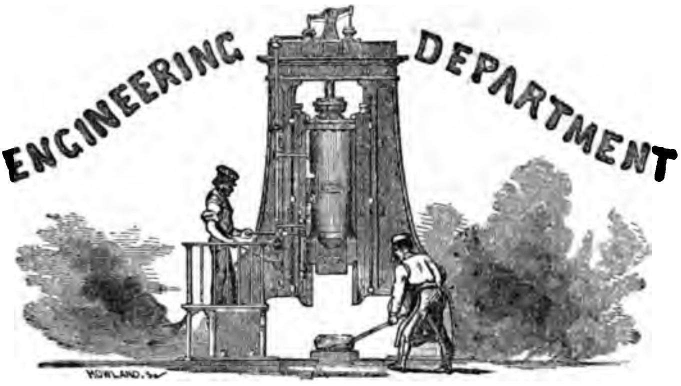
and side, to cover the part to be repaired, one side to fit the side of the ship. The locality of the spot from which the copper was removed being known, there was little difficulty in preparing timbers of the shape of the side of the vessel, upon which a box, or diving-bell, was projected, of sufficient size and strength to sustain the pressure of the water from without, when the water from within was removed. When finished, the edges, coming against the side of the ship and forming the margin of the open side, were padded with canvas, so as to be brought close to prevent the passage of the water, and the whole fabric being provided with ring-bolts, for securing the box to its place, by means of ropes passed under the keel and up the opposite side, in like manner, it was secured firmly, fore and aft; and when thus made fast, the water was pumped out, and workmen went down to the place, when the copper and worm-eaten plank were removed, a new plank inserted, fastened, caulked, and re-coppered. All this while the ship was afloat, and the defective part from 15 to 18 feet below the surface of the water. The ship went to sea and performed the usual cruise of three years, more or less, and Mr. Broadie was awarded $500, by Congress, for his mechanical skill.

NEW VESSELS ON THE STOCKS.

We shall always be glad to publish full descriptions of vessels on the stocks, giving the kinds of timber and scantling size, with dimensions, model, rig, and all other particulars. Parties who build for the *market*, and desire to furnish the commercial public with an account of what they are constructing, are therefore invited to send us the tables, or draft, of their vessel,, together with a full description, and account of all improvements, for publication in the Nautical Magazine. It is always desirable to see the *draught* in connection with the description.

This Magazine is rapidly becoming popular as the exponent of American ship-building, and it is our intention, with the enlightened co-operation of the ship builders in the United States, together with their brethren of British North America, to present to the commercial world a mirror of the ship-yard, as well as a daguerreotype of the ship; and to this end, our friends have only to sit down and help themselves.

Then send on your vessels, and if they are for sale, here is the place to show your customers *what they are*.



SCREW PROPELLERS.

It has been contended for a considerable time by engineers, that the submerged propeller, as a mode of propulsion, was not the best adapted to the higher rates of speed in navigation, and that whatever might be the form, whether that of the regular, that of the irregular, or no screw at all, it could not supercede the paddle-wheel, in its adaptation to all the purposes of navigation; and, indeed, so strongly impressed were some in favor of paddle-wheels, as being the very best application of power for propulsory purposes, that they have refused to entertain any proposition for propulsion which had no paddle in it. The slip of the wheel was acknowledged, and the proper modes of reducing the same to a mere moiety, were also referred to; and, indeed, it was supposed that the mind must indeed be set at a most obtuse angle if it could not grasp, and at the same time coincide with, the proposition. On the other hand, the adherents of the screw have had so much confidence in it, on both sides of the Atlantic, that they have applied that great engine, *the press*, to their different modes of submerged application, and the result has been that we have had newspaper articles, pamphlets, and bound volumes in abundance upon the subject. Finding that the Empire City had taken such rank hold of side-wheels, the people of Philadelphia claimed, as their share in the distribution

of knowledge, all that pertained to the application of the screw in submerged propelling power. And thus, at the date at which we propose to begin, the two modes of propulsion each had its adherents, without the least prospect of a compromise. We have not the space, had we the desire, to go back and examine all the sensible and senseless propositions which have been inducted into this department of the mechanical world, nor do we believe the readers of the NAUTICAL MAGAZINE would be interested by so doing; and shall therefore carry out our review of the past few years, seeing that it would be injudicious to continue an article beyond the close of the volume. Steam navigation on this side of the Atlantic has been fairly divided into two kinds: the side-wheel, and the screw. The prejudices against the screw, in New-York, were very great; a circumstance our neighbors did not fail to notice and turn to good account, and having the experience of our trans-Atlantic friends, they found no difficulty in following in their wake. The rivalry in steamboat travel on the Hudson River, Long Island Sound, and about New-York, rendered it quite apparent that the fastest boats must be had, and that New-York would be able, in her favorite mode of propulsory application, to secure the fastest river boats in the United States, if not in the world. Their complete success on this kind of vessel induced capitalists to suppose that they must be equally successful in submerged propulsion; and, as a consequence, several large vessels for sea-going purposes were built, which, for want of adaptation in power and its application to resistance, proved to be little better than total failures. This encouraged the adherents to side-wheels in New-York, and was equally advantageous to the friends of screw propulsion in our sister city, encouraging the belief that they would be able to enjoy the exclusive benefit of what they were pleased to call their favorite mode of propulsion. Things moved on quietly, for a time; the metropolitans of commerce built side-wheel ocean steamers which were the admiration of the world, unequalled in beauty and speed; and if New-York required any propellers, they must be built in Philadelphia, as a matter of course. Still, there were some radicals in the Empire City, who obstinately persisted in maintaining that

whatever had been done in Philadelphia could be done in New-York, and they perversely adhered to this opinion with such tenacity, that they actually made some of the merchants believe it, and the consequence was that several vessels were built, and the submerged application of propulsory power adopted; when it was fairly yielded that it was in the men, more than in the locality, that success depended. But what is most remarkable in the history of screw propulsion is, that so completely had the manner of its adoption in England been followed by the engineers of the sea-board in the United States, that, in many instances, the success of the one seemed to be but little better than a duplicate of the other. On the other hand, in side-wheel propulsion the mechanics took independent ground, and thought for themselves, both in their engines and in the proportions of their paddle-wheel; and so far did they carry their improvements in the engines that, in many instances, they laid aside all other kinds of engine but those of the vertical beam, such as is used in the river boats—purely American. The mechanics and engineers bordering on the fresh water inland seas were still more independent and self-confident—too much so to be led by either the English engineers, or those of the city of brotherly love. Their navigation demanded a moderate draught of water, and all the speed that could be obtained; but, in addition to this, the season, at best, was not of greater length than was required for the work to be done, and a more reliable mode of transit than wind was desirable. They had obtained some experience both in paddle-wheel and screw propulsion: this, to them, had been of more value than an equal amount had proved to be on the sea-board. They had found some significance in the fact that their screw vessels ran about as fast loaded as they did light, and that the unimmersed section of the propeller, when the vessel was light, did not bear the same ratio to the diameter of the screw that the resistance of the emerged part of the vessel did to that which was immersed. Hence it was clear that a complete immersion was the most effective; but to obtain this at all times would be to increase the draught of water, and inasmuch as this would not secure ingress into all the harbors, the conclusion was deemed a safe one to increase the diameter

of the screw, though, as a consequence, it should never be submerged. The philosophy was sound, that inasmuch as the outer edge of the blade was most effective, by keeping it the same distance below the surface, and at the same time increasing the diameter, would secure the most efficient service, all things else being equal. Upon this hypothesis large screws were introduced with the most flattering success. Not content with the advantages gained, its advocates sought every opportunity to compare its power with the side-wheel, and they were not long in deciding that its powers for towing were decidedly the best. But as one innovation only paves the way for another, some daring spirits were of the opinion that if one propeller was so good on the stern of the vessel, that certainly one on each side would be still better; and we accordingly find that the side-wheel steamer Baltic, of Buffalo, was dismantled of her wheels to make way for a pair of side-propellers, on the plan of, and under the direction of, Capt. H. Whittaker, a man well known in the history of steam navigation on our inland lakes, whose observation and experience furnished a fund of knowledge well-adapted to a progressive mind. The Baltic, having been completed as a freight-boat with side-propellers, supported and protected by a guard, as in the paddle-wheel, has run one season, establishing the feasibility of the application of screws on the sides of the vessel. Capt. Whittaker proposes to apply three times the motive power on boats of the same size, or of equal tonnage with the lake propellers, of light build, and fine running model, causing an increase of revolutions with a greater pitch to the screw, which he thinks would travel from 30 to 40 miles per hour when making from 100 to 125 revolutions per minute, and to increase the number of engines and screws in proportion to the size of the boat. The engines to be oscillating high pressure, with direct action, and placed on the gunwale of the boat, two to each screw; the two cranks attached to each shaft to be at right-angles with each other. On large boats he proposes to apply from two to six pair of engines on each side of the boat, with a propeller to each pair of engines; the object of which is to save the large amount of power on each screw, which is lost by the present application to the wheel, and this increase he

thinks may be obtained with very little increase of weight or expense. Capt. Whittaker is now in New-York with several models of his proposed improvements on exhibition, and, as we learn, he has had the good fortune to find parties to undertake the construction of a steam vessel, for towing, which shall fully test the merits of his invention. It is highly desirable that every innovation in marine engineering should have a fair trial. We shall revert to this subject at another time.

QUALITY OF METAL FASTENINGS.

A correspondent calls the attention of the readers of the Nautical Magazine to the small amount of metal fastenings often put into vessel's bottoms—a subject that should not be overlooked, nor should it be regarded as a matter of small moment whether the strength of that amount be commensurate with the demands upon it. Iron has been long since abandoned as a fastening for the bottom of vessels running in salt water. Its strength was unquestionable; but the corrosive qualities it possessed rendered it unfit for the submerged parts of the hull, and copper was substituted at greatly increased cost. The ductility of copper, however, has ever been a barrier against using it with sufficient drift to regard it as a reliable metallic fastening. In addition to another defect, when brought in contact with moisture, such as is always found in the submerged parts of vessels, it generates verdigris, and becomes quite slack, much more so than when first driven. To obviate this as far as possible, the outer fastening, or those holding the plank, were mixed with alloy, which answered a two-fold purpose, when properly proportioned: not only retaining its holding power, but being of sufficient rigidity to allow being driven with much more drift than pure copper could be, while, at the same time, it cost less. Occasionally, however, it was found, upon opening vessels, that the spikes which were known to be good when driven, were very brittle, and the brass founder, or maker, was charged with being at fault; and there the matter ended. Within the last

few years, the pure copper has been almost abandoned for the keel and dead-wood fastenings in many parts of the ship-building districts, and the Muntz, or yellow metal as it is called, has been imported to be used for this purpose, as well as for sheathing the bottoms of vessels.

A letter from R. Armstrong to the editor of the *London Artisan* asserts, that in every case in his experience where it has been necessary to have bolts removed, he has found them either broken, or so brittle as to be broken with the slightest force, and discovers that the appearance has been changed, much more resembling brown earthen-ware, in appearance, than brass ; and says that the same metal, when used as sheathing, becomes so brittle, that it may be crushed within the palm of the hand, and believes the same destructive agency is being applied to the bolts, which he thinks is consequent upon the action of sea-water, from which an electrical action takes place, which, being composed of copper and zinc, operates the same as in a galvanic battery. We think Mr. Armstrong has arrived at the cause; we have long known the effect from our own observation. But under few circumstances would we go back to pure copper. We regard it as but little better, for the reasons we have already named, when driven by hand. We would prefer galvanized iron, and, when properly coated and allowed time to cool, is better than either copper, or the patent Muntz metal ; and, with our present knowledge of galvanized iron, should not fail to use it when occasion required. We have long wondered why the insurance companies, who are so deeply interested, have not investigated this subject on their own account.

EXPERIMENTS IN FUSIBLE ALLOYS.

CONDUCTED BY JAMES C. BOOTH, PHILADELPHIA.

[Reported to the Secretary of the Treasury.]

SIR:—I have the honor to transmit a report on the experiments you requested me to undertake in relation to fusible alloys, designed to prevent explosions of steam boilers. * *

The safety of a steam boiler partly depends on keeping the pressure of steam within the prudential limit adapted to it; and hence the employment of the safety-valve, designed to open at determinate pressures, and of other arrangements for indicating the amount of pressure. Experience has shown that such methods of indicating or preventing undue pressure are not always reliable; and the frequency of perilous explosions proves that contrivances to prevent them should be multiplied until, after a full and fair trial, those found to be most efficient may be generally employed.

Since the pressure of steam bears a proportion to its sensible heat, the measurement of the temperature of steam in the interior of a boiler is a good indicator of pressure. The apparatus used for this purpose acting only indicatively, and being liable to derangement, alloys, fusing at determinate temperatures, have been proposed and tried as a substitute. The advantages of their employment are, that they may be located beyond the liability of being tampered with, and that, by their connection with suitable arrangements, they may give audible alarm when the pressure of a boiler passes beyond its ascertained and determined capacity; hence the clause in the steamboat law, passed by Congress in 1852, requiring the use of metallic alloys, which will fuse at points of temperature corresponding to the allowed pressure, and will thereby give notice of such proper limit having been exceeded.

If such alloys can be prepared, of uniform and reliable character, greater safety in travelling will be secured. It was at your request that I have undertaken experiments to determine the composition of such alloys, and if they should be discovered or invented, to make them for public use.

The pressures to be measured are, each 10 pounds, from 10 pounds aboye the ordinary pressure up to 160 pounds. Upon examining the results of various experiments made to determine the correspondence between the pressure and temperature of steam, a notable disagreement was found among them, especially at the higher pressures. It was determined to adopt the fol'owing scale, based upon investigations made by a committee of the Franklin Institute, "on the explosions of steam-boilers," under the authority of the Treasury Department, and published in 1836 :—

Pressure, in lbs. above 212° F.	Temper. Fahr.	Pressure, in lbs.	Temper. Fahr.	Pressure, in lbs.	Temper. Fahr.	Pressure, in lbs.	Temper. Fahr.
10	240°	50	297°	90	328°	130	352°
20	260°	60	306°	100	334°	140	357°
30	275°	70	314°	110	340°	150	362°
40	287°	80	321°	120	346°	160	367°

The object being to procure sixteen alloys, melting at the temperatures given in the above table, all authorities were first examined in relation to such alloys. The most important of these are the experiments of the committee named above, having direct reference to fusible alloys, and those by Rudberg, of a general character. But as neither authorities, nor any others, gave more than a few of the above alloys, and as their experiments showed unsatisfactory results with some of them, it became clearly necessary to conduct a large series of experiments on fusible alloys generally, in order to ascertain which might be available for our purpose.

To have tested the numerous mixtures which we devised, in a steam-boiler, would have consumed too much time and expense, and would not have allowed the minute study of their character at different temperatures. A small and inexpensive apparatus was therefore contrived, which was modified repeatedly to meet difficulties as they presented themselves in the course of experiment. The method last adopted, and which doubtless gives results closely approximating to those which would be obtained in a boiler, consisted of a bath of mercury, into which a long and narrow square box of iron was thrust, and clamped. The alloy was put into the box, a thermometer plunged into the mercury, and the whole heated by gas.

The first series of experiments was made by observing the *cooling* of the melted alloy, because it had been previously observed that such a course gave more satisfactory results than observations on the *melting* alloy. In this series the fusible alloy was melted in the inner box by heat applied to the mercury bath, and the fire being shut off, the different states of consistency of the metal were frequently tested by a stiff iron wire inserted into it. The experiments were repeated twice or oftener, in order to confirm the results.

This series of tests confirmed the conclusions which Rudberg first demonstrated, that by slowly heating many of these alloys, a more fusible compound segregates, or eliquates, before the true melting point of the whole alloy is reached, and a less fusible one remains; that on cooling many of the liquid compounds, a crystalline or chemical compound begins to aggregate in the liquid mass before the true solidifying point of the whole alloy is attained; and that, in all such cases of segregation or aggregation, the metals are uniting together in new proportions, which are definite chemical compounds; for when the metals are united in such proportion, and tested alone, they exhibit no such irregularities. The following table, embracing a few alloys, exhibits the wide range of temperature and different degrees of consistency of those which are not united in due chemical proportion, and the uniformity of all those which are chemical compounds:—

Marks.	COMPOSITION.				BEHAVIOR.					
	Chemical formula.	Tin.	Lead.	Bismuth.	Perfectly fluid.	Pasty.	Stiff Pasty.	Granular.	Solid thro'out.	Remarks.
6	$Pb\ Sn_3$	174	104	—	365	—	—	—	358	Chemical.
4	$Pb\ Sn$	58	104	—	450	448	430	370	364	
21	$Bi\ Sn_3$	174	—	208	296	284	280	—	274	Chemical.
19	$Bi\ Sn$	58	—	208	380	372	350	310	276	
23	$Pb_3\ Bi_2$	—	156	208	332	270	—	—	256	Chemical.
22	$Pb\ Bi_2$	—	52	208	390	386	380	358	285	
M	$Pb\ Sn_3 + Bi_x$	174	104	90	323	320	316	—	258	
k'	$Pb\ (Bi)_x\ Sn_3$	174	66	76	338	337	333	—	267	
13	$Pb\ Bi\ Sn_2$	116	104	208	246	236	230	—	203	

It will be observed from the above table, that Nos. 6 and 4 are two different proportions of tin and lead, whose solidifying points are nearly the same; and yet there is so rapid a change in 6 from the solid to the liquid condition, that the pasty condi-

tion could hardly be observed; while in 4, there are 66° Fahrenheit between the solid and stiff consistency. In cooling No. 4 from its fluid state it becomes more and more stiff, and finally granular, which indicates the segregation of another alloy. This alloy has the composition of No. 6. Now, when these two metals, lead and tin, are fused in any other proportion, the same alloy is observed to separate. It is therefore the true chemical alloy, and the only one yet ascertained of those two metals. The same remarks will apply to Nos. 21 and 19, compared together, and to Nos. 23 and 22.

It appears that there are but three chemical alloys available for our purpose—Nos. 6, 21, and 23; and all other proportions of the composing metals are mere mixtures of one of these alloys with the preponderating metal.

The addition of bismuth to an alloy of tin and lead diminishes its infusibility; and the last one in the table, No. 13, exhibits the lowest point of solidification of all which we have tried, it being 9° below the boiling point of water. The two alloys marked M and k' are composed of the same metals, the former showing the influence of bismuth *added* to the chemical alloy, No. 6, and the latter, k', the effect of a *substitution* of a quantity of bismuth for lead, in the same alloy, 6, in the proportion of their equivalents.

The table shows, further, that in all, except the three chemical alloys, the point of fusion is not fixed, but would be named differently by different experimenters. Since the greater part of the alloys required for steam-boilers must necessarily be mere mixtures, it is essential that we should assume that to be the point of fusion at which the apparatus to be employed with the fusible alloys in practice exhibits motion; *i. e.*, when the alloy is sufficiently fluid to allow a solid body to move in it.

Again: because the alloys must be chiefly mixtures, from which a chemical compound would tend to segregate when heated, they should be enclosed in a steam-tight box in the boiler, so that the pressure of steam cannot act upon them, and cause the actual eliquation of the chemical alloy; for if eliquation occur, the fusing point of the residue will be entirely different from that of the whole alloy, and its utility will be consequently destroyed.

Since we have but three reliable chemical alloys, we endeavored to increase the number of reliable ones, although not of simple chemical constitution, by modifying the three. This was effected by reducing the melting point by adding that metal which is wanting in the original alloy, and by increasing the point by the addition of antimony or zinc.

There are two principles involved in these additions: 1st. The substitution of one metal for another in equivalent propor, tions; and, 2d. The addition of small quantities of foreign matter, whereby the melting point is altered, to a moderate extent, without the danger of segregation.

We have tested about one hundred different mixtures of the three metals, tin, lead, and bismuth; from which we have been able to cull out a large number that promised to suit our purpose. These have been, and are now being tested in the second series of experiments, in which the melting point is determined by direct observation. The same apparatus was employed as above described, except that to one end of the stiff wire were attached four cross-pieces, like paddles, which were allowed to solidify in the melted alloy. Heat being applied to melt the alloy, as soon as the other end of the wire could be readily turned by the hand, indicating sufficient fluidity in the metal, the then observed temperature was noted as the fusing point. After a repetition of such a test, the alloy was either retained or rejected.

By these means we have obtained some ten alloys, which will probably be available in ordinary use, and we have fair ground for believing that we can complete the whole series with alloys of sufficient reliability, even if not absolutely perfect.

The final test to which the alloys must be subjected before they can be approved for their designated use, to protect life, is that of the steam-boiler itself. Agreeably to your instructions, a boiler is being made for the purpose, and will, it is hoped, be soon set for experiment. Those alloys which are found to work well under this trial can then be made in any required quantity.

At the date of December 2, 1854, the above boiler was completed, and ready to set, preparatory to entering upon the final tests. At that time, Mr. Booth had twelve or thirteen alloys

which he thought could be relied upon in practice, and was very anxious to complete his interesting experiments, having hopes to be able to be ready with the whole sixteen alloys required, to test them by the boiler, before the close of the year.

WATER-TIGHT BULK-HEADS IN STEAM VESSELS.

RECOMMENDED IN OFFICIAL CORRESPONDENCE.

From a letter to the Secretary of the Treasury, dated Dec. 1, 1854, written by Wm. M. Gouge, Esq., Clerk of the Correspondence under the Steamboat Law, of 1852, we extract the following:— "If Congress is justifiable in making any provisions for the lives of passengers on board steam vessels, it will be justifiable in requiring such as are hereafter built, to be constructed with water-tight sections." "It may be objected, that if steam vessels are constructed with water-tight sections, there will be little danger of their going to the bottom, but then they will not carry as much freight: and profit is the great object men have in view in building and equipping steamships. (1.) Supposing this to be true, some attention should be paid to the safety of passengers as well as to profits from freight, in vessels intended expressly for passenger vessels. (2.) If the loss on freight should be considerable, the owners can compensate themselves by raising the price of passage money; and travellers ought cheerfully to pay the increased fare. (3.) It is poor economy in a man to pay a low price for a passage, and then be drowned before he gets half way to the end of his contemplated journey." (4.)

Remarks.—(1.) The writer above may be taken as the exponent of a class who do not see beneath the surface of things in maritime philosophy. Let it be understood, that in mechanical as in moral science, obedience to great truths never confer single blessings. It must not be forgotten that the same construction, by bulkheads or otherwise, that *saves* the passenger saves the ship, also thus insuring prospective "profits," by *saving the stock.* It is only necessary to be qualified by practical knowledge to understand, that the very means which are proposed to render steam vessels secure for travel, are equally well adapted,

and quite as imperatively demanded, for the strength and security of the vessel itself. The intelligent shipbuilder is able to show, that all long vessels would be vastly enhanced in value by having, in the first place, a longitudinal bulkhead partition, or kelson, (as we prefer to call it,) of plate iron, either double or single, extending the entire length of the hold, secured to the floor at the bottom, and to the deck beams at the top, thus dividing the hold into two equal compartments. We say this is required to strengthen the vessel, and is necessary in itself to give safety and durability to the hull, were there no possibility of collisions, or of foundering. In the second place, still greater security may be given to the hull of the vessel, to the lives of passengers, to the good condition of cargo, and its safe delivery, by placing two similar bulkheads across the vessel, at a convenient locality, forward and abaft the machinery. The hold will thus be divided into six compartments. These advantages to the ship amply compensate the very small loss of freighting capacity. The difference in the rates of insurance alone would be fully equal to it.

(2.) The salvation of the *vessel*, in case of disaster, is a sufficient compensation for the expenditure necessary to secure the lives and comfort of passengers.

(3.) No increase of fare would be called for on account of life-boat construction; on the contrary, the *increased confidence* of the travelling public would so multiply travel, that prices might be lowered. It will be found on the introduction of life-boat steam passenger vessels, that the element of *safety* is alone sufficient to secure an ample reward to the intelligent proprietors, who shall first comply with this popular principle.

(4.) It is equally poor economy in an owner to pay a low price for a *vessel*, and then lose her before she gets half way to the end of her voyage. Underwriters and owners, and the country at large, are all losers by the same imperfect condition of things, which entails unnecessary hazard and loss of life upon the travelling public. How much of the wealth of the world is wasted, in shipwrecks, conflagrations, and wicked wars!

PARTICULARS OF NEW BRITISH STEAMERS.

SCREW STEAMER "CLYDE."

Hull, of iron; built by Scott, Sinclair and Co.; machinery, by the same firm. Intended service, New-York to Glasgow.

HULL.

Length on deck	250 ft.
Breadth of beam	31 ft.
Depth of hold	21 ft.
Draught of water at load-line	17 ft.
Draught of water below pressure and revolutions	15 ft.
Masts and rig—three-masted brigantine.	

Engines.—Inclined athwartship; geared, 2½ to 7; diameter of cylinder, 52 inches; length of stroke, 3 feet 10 inches; pressure of steam in pounds, 12; revolutions per minute, 34. *Boilers*—Four, tubular; number of furnaces, 12; description of coal, bituminous. *Propeller*—Diameter of screw, 12 feet; pitch of, 15 feet; number of blades, 3.

Remarks.—Frames, shape and dimensions, angle iron, 5½ + 3 + ½ inches; distance apart at centre, 15 inches. Plates, thicknesses, one inch to five eighths. Kelsons, number and dimensions, 3; one, a box kelson, and two angle iron ones on the sides. Is ceiled with wood, to turn of bilge. Is clincher-built, and abut. riveted.

SCREW STEAMER "CLEOPATRA."

Hull of iron, built by William Denny & Brother, Dumbarton; machinery by Tulloch & Denny. Intended service: Liverpool to Portland, and Montreal.

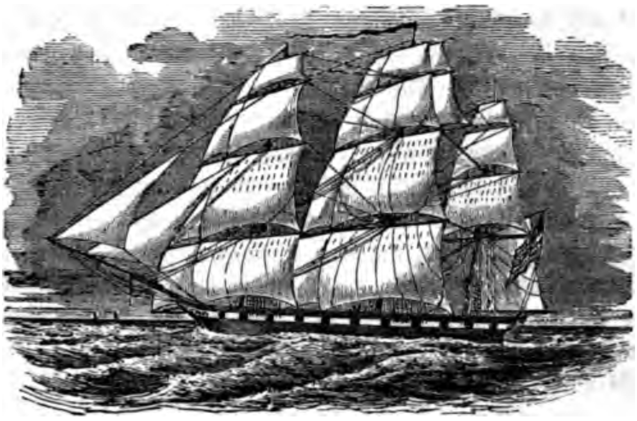
HULL.

Length on deck	228 ft.
Breadth of beam, midships	32 ft.
Depth of hold	25 ft. 2 in.
Length of engine and boiler space	63 ft.
Tonnage	1,138 ft.
Masts and rig—ship.	

Engines.—Vertical beam, diameter of cylinder, 62 inches; length of stroke, 4 feet 6 inches; maximum pressure of steam in pounds, 10; weight of engine, 150 tons. *Boilers*—Two, tubular; length of boilers, 9 feet; breadth, 12 feet 9 inches; height, exclusive of steam chimney, 12 feet 4 inches; weight, without water, 150 tons; number of furnaces, 8; length of grate bars, 6 feet 6 inches; number of tubes, 580; internal diameter of tubes, 3½ inches; length of tubes, 6 feet; diameter of smoke pipes, 5 feet 11 inches; height, 40 feet; description of coal, bituminous. *Propeller*—Diameter of screw, 14 feet; pitch, 18 feet; number of blades, 2. *Remarks*—Frames, shape and dimensions, angle iron, 5 by 3 inches, and $\frac{9}{16}$ inch thick; distance apart at centres, 18 inches. Plates—thicknesses, ¾, $\frac{11}{16}$, $\frac{9}{16}$, and ½ inches. Has 6 water-tight bulkheads, clincher-built, with abut. riveted.

Artisan.

Nautical Department.



ABSTRACT OF LOG OF CLIPPER SHIP "MISCHIEF."

W. E. LAURENCE, MASTER,

FROM FOO-CHOW-FOO, TOWARDS NEW-YORK.

On the 11th day of September, 1854, the clipper ship "Mischief," commanded by W. E. Laurence, sailed from Foo-Chow-Foo, China, for New-York. After the first few days of the voyage, light, baffling, or variable winds, with squalls of rain and cloudy weather, prevailed, until October 22d, when the ship came to anchor in Anger Road. Up to this time, the best day's run was 233 miles, and the poorest, 32 miles. Heavy squalls, with sharp thunder and lightning, were frequent visitants. September 21st, 11, P. M., discovered a ball of fire at each mast-head, throwing out as much light as a lantern, although it was intensely dark all around the ship; you could see everything on deck as plain as if the ship was illuminated aloft. A heavy squall of rain had preceded this appearance. Lat. about 10°; Lon. 110°.

Sept. 28th—Tacked ship, in company with an English clipper, and in four hours worked six miles to windward of her. Lat. 5°, lon. 107°, noticed that, for the last three days, at or about the time the moon rises, the wind hauls to northward of

west, and continues so till it sets, when it again falls back to S. W., or in that quarter.

Oct. 4th.—Made the three most western of the North Anambas' Islands, bearing due south. Light head winds prevailed for the greater part, till the 18th, when, anchored off Pulo Leat, to offer assistance to the Dutch bark "Henri Wersie," from Amsterdam to Whampoa, which was ashore on Pulo Leat. The English clipper ship "Aurora," and the Am. ship "Archer," also came up and anchored, and sent boats to his relief, but he did not want any help. At 12, M., hove up, and beat down the Straits in company with the above clippers. At 8, P. M., west end of Pulo Leat, N. N. E., east end of Entrance Point, west, distant the latter place five miles, came to anchor, in company with the other ships, deeming it unsafe to run at night. When the "Mischief" got under way this morning, the *Archer* laid half a mile astern, and the *Aurora* eight miles ahead. At meridian she had run the former hull down astern, and the latter was but three miles ahead. Oct. 20th, was passed by an English screw steamer; the Archer was lost sight of, and the English clipper held her own. Oct. 21st, 8, P. M., deeming the ship up with the "North Watcher," Captain Laurence came to anchor in 15 fathoms. At 1, A. M., the Archer also came up and anchored about 5 miles to windward. At 4½, A. M., got underweigh, in company with the Archer; at 6½, A. M., made the English clipper "Aurora," just in sight, ahead. Brisk breezes and fine clear weather on this day. Meridian overhauled, and passed the "Aurora," and crept up under the lee quarter of the "Archer." *Oct. 22d.*—Baffling winds; 4, P. M., passed St. Nicholas Point; sundown, passed close to the Button, and came very near being drifted on the rocks. The Archer and Aurora close alongside.

At 2, A. M., anchored in Anger Road. At 8, A. M., the crew refused to do duty, in getting the stores on board from shore, and in fitting a new jib-stay. Upon the exchange of some hard words between the men and first officer, the former made a rush and caught him, and severely injured him in an assault and battery. When the captain came on board, in the evening, he called the crew aft, and remonstrated with them

upon their conduct in refusing to do duty all day, and told them to loose the topsails. This they refused; so, seeing there was a case of mutiny on hand, Captain Laurence sent them forward. *Oct. 23d.*—Fine and clear—the crew off duty, which they refused to do. Took on board wood, provisions and fruit. At 6, A. M., the men were called aft, and told to heave the anchor up, which they now condescended to do. One man still refused to do duty, and was put in irons. During the remainder of the day, beat through the straits.

LOG THENCE TO NEW-YORK.

DATES.	LAT.	LON.	COURSES.	DIST.	WINDS.	REMARKS.
Oct. 24	7° 17′, S.	102° 10′, E.	W. by S. ½ S.	218	S. by E.	All sail set. "Archer" and English ship, "Red Gauntlet," in company.
25	8 ·15	98 ·15	W. by S. ½ S.	269	S. S. E.	Strong winds; running finely.
26	10 ·06	94 ·00	S. W. by W. ½ W.	278	S. E. by S.	All sail set; strong trades.
27	12 ·00	90 ·00	S. W. by W. ½ W.	284	S. E.	Do. cloudy weather.
28	14 ·06	86 ·06	S. W. by W. ½ W.	284	S. E.	All sail set; released a man from irons; strong winds.
29	16 ·05	82 ·15	S. W. by W. ½ W.	259	S. E.	Overhauled and passed English clipper "Aurora," who had left *Anger* 6 hours ahead.
30	17 ·38 S.	78 ·42 E.	W. S. W.	263	S. E.	Squally weather.
31	19 ·00	75 ·46	W. S. W	228	E. S. E.	Strong winds and fair.
Nov. 1	20 ·02	73 ·05	W. by S ½ S.	200	E. S. E.	Brisk trades, and fine.
2	20 ·57	70 ·12	do.	203	S. E.	Do. with squalls of rain.
3	22 ·00	68 ·00	do.	154	E.	Light, variable winds.
4	22 ·17	66 ·00	W. ½ S.	122	E.	Light, do.
5	22 ·54	63 ·07	do.	185	S. S. E.	Brisk trades; fine.
6	23 ·20	60 ·30	W. by S.	124	S. E.	Light winds; all sail.
7	24 ·18	58 ·10	do.	206	S. S. E.	Puffy and fine.
8	25 ·10	56 ·01	do.	156	E.	Moderate and variable.
9	25 ·35	55 ·16	do.	63	E. N. E.	Very light winds; cloudy.
10	27 ·14	50 ·46	W. ½ S.	277	S. E.	Squally, with rain.
11	27 ·53	47 ·40	West.	220	S. E.	Strong trades; cloudy.
12	29 ·08	43 ·09	do.	258	S. E.	Do. fine and clear.
13	30 ·34	39 ·00	do.	262	E. S. E.	Do. and squally.
14	31 ·51	35 ·48	do.	213	E.	Moderate; light rain squalls.
15	33 ·14	32 ·00	W. ¼ N.	225	N. E.	Strong winds; hazy.
16	34 ·00	30 ·11	do.	144	E. N. E.	Moderate trades; foggy.
17	34 ·38	28 53	W.	89	S. S. W.	Light head winds.
18	35 ·31	25 ·40	W. by N.	166	S. S. E.	Moderate breezes; cloudy; a two-knot current setting west.
19	36 ·17	21 ·00	do.	291	S. E. by E.	Strong gales; ship running 14 knots an hour.
20	37 ·00	18 ·35	W. N. W.	168	N.	Squally; thunder and lightning.
21	35 ·52	17 ·20	N. W.	139	N. W.	Heavy weather; reefed.
22	34 ·45	15 ·21	N. N. W.	187	W.	Blowing hard; shipping water.
23	32 ·47	12 ·13	N. N W.	242	S. W.	Strong breezes; 2, P. M., passed through a patch of discolored water. It appeared in the shape of a half moon, and the color of a very light green, and thick looking.
24	30 .42	9 ·28	N. by W.	222	South.	Strong breezes; cloudy.
25	28 ·51	7 ·00	N. N. W.	186	S. S. E.	Brisk do., fine and clear.
26	27 ·33	5 ·00	N. N. W.	126	S. S. E.	Light breezes, and fine.
27	25 ·56	4 ·15	N. by W.	138	S. S. E.	Light and moderate.
28	24 ·20	2 ·04	N. ½ W.	138	S. S. E.	Light, lost sight of the Cape birds all sail set.
29	23 ·00	00 ·35	E.N. by W.	132	S. by E.	Crossed meridian; pleasant.

DATE.	LAT.	LON.	COURSE.	DIST.	WINDS.	REMARKS.
29	21 ·57	00 ·20	W. N. N. W.		S. S. W.	Light and baffling; heavy dews.
30	20 ·09	3 ·15	N. W. by N.	166	S. S. E.	Light breezes; fine.
Dec. 1	18 ·52	5 ·30	do.	168	S. S. E.	Light trades; all sail set.
2	17 ·43	7 ·57	do.	174	S. E.	Brisk and squally.
3	16 ·12	10 ·50	do.	198	S. E. by S.	Strong trades, and cloudy.
4	14 ·50	13 ·18	do.	170	E. S. E.	Brisk, baffling and squally.
5	12 ·55	15 ·44	do.	190	S. E.	All sail set; brisk trades.
6	10 ·16	18 ·10	do.	192	S. E.	Strong trades; fine and clear. Saw a large flock of land birds.
7	9 ·34	21 ·00	do.	176	S. E.	Brisk trades; fine and clear.
8	7 ·54	23 ·11	do.	180	S. E.	All sail set; fine and clear.
9	6 ·19	25 ·30	do.	190	S. E.	Brisk trades; fine and clear.
10	4 ·37	27 ·28	do.	176	S. E.	Cloudy, and brisk trades.
11	2 ·32	29 ·46	N. W. by ½ N.	186	S. E.	Do. do.
12	00 ·37 S.	32 ·05	N. W. by N.	198	S. E.	Brisk, and squally, rain.
13	1 ·27 N.	34 ·00	do.	180	S. E.	Do., fine and clear.
14	3 ·55	36 ·15	N. N. W.	198	S. E.	Do., all sail set.
15	5 ·22	37 ·39	do.	116	S. E.	Light trades: unsteady. A great brilliancy in the water at night—large spots of liquid fire appearing and disappearing under surface.
16	6 ·00	37 ·10	N. W. by N.	72	S.	Light and unsteady breezes.
17	7 ·05	38 ·25	do.	106	N. N. E.	Foul weather; light.
18	9 ·04	40 ·22	do.	174	N. E.	Strong tide rips; flying fish.
19	11 ·00	43 ·03	N. W. ½ W.	188	N. E.	Squalls of rain.
20	13 ·11	46 ·20	N. W.	240	N. E.	Fresh gales; rain.
21	15 ·21	49 ·45	N. W. ½ W.	252	E. N. E.	Strong trades; fine.
22	17 ·02	53 ·29	N. W. ½ W.	238	E. N. E.	Strong trades; unsteady.
23	19 ·11	56 ·47	N. W. by W.	263	E. N. E.	Do. and puffy; fine.
24	20 ·30	59 ·38	do.	201	N. N. E.	Unsteady; fine and clear.
25	22 ·09	62 ·41	do.	219	N. N. E.	Strong, variable and squally; laboring heavy, and shipping much water; heavy sea; large quantities gulf weed.
26	24 ·05	65 ·51	N. W. ½ W.	226	N. E.	Fine and clear; all sail set.
27	25 ·18	68 ·20	N. W. by W.	126	S. E.	Very light, and baffling winds.
28	26 ·30	69 ·10	do.	92	S. W.	Light, baffling airs.
29	29 ·00	71 ·00	N. N. W.	210	S. W.	Blowing hard; reefed canvas.
30	30 ·20	69 ·52	N.	122	N. W. by W.	Hard gales—rain and hail. Laboring hard; shipping seas.
31	30 ·12	70 ·40	W.	133	N. N. W.	Strong gales, and cloudy.
Jan. 1	31 ·45	72 ·28	N. W. by N.	148	N. N. E.	Heavy sea; shipping water.
2	34 ·41	74 ·32	N. N. W.	221	N. E.	Strong breezes; fine and clear.
3	37 ·35	74 ·32	do.	154	E. N. E.	Baffling and squally; sounded in 35 fathoms.
4	38 ·33	73 ·57	N. E.	62	S. E.	Calms, and baffling.
5	Sandy H'k. N. by E. 40 m.		N. by E.	168	E. N. E.	Strong winds; dirty weather;—10 A. M., took a pilot.
6	..	..	N. by E.	25	E. N. E.	Laying off and on shore. Wind light; made harbor of New-York.

Passage from Anger, 75 days; distance sailed, equal to 13,913 knots; average speed in knots, per day, equal to 185½. Best day's run, 291 knots. The "Mischief" is about 600 tons, and was built in Somerset, Mass.

For the Nautical Magazine.

THE MARINE SOCIETY OF SALEM, MASS.

The Salem Marine Society commenced in 1766 by a meeting of 18 persons, composed of ship-masters and ship-owners, with a view of collecting information of our own coast and any foreign places that they might visit, and communicate all such information obtained to the Marine Society, that being the name given to their association, and at the same time, by the payment of a small sum monthly, to form a fund, a portion of which might be applied to any member, or his widow, who, from accident or misfortune, might be in need thereof.

We have never attempted to form a library, nor museum. The East India Marine Society have a large museum; a large portion of the members of our Society are also members of that Society. Our Society has paid much of their attention to the erection of light-houses, and placing buoys about and around the harbor.

In 1791, a beacon was built upon Baker's Island at the expense of the Society.

1792.—*January* 26. The Society voted that a correspondence be entered into with the Marine Societies of Boston and Newburyport, and obtaining their opinions in regard to a light-house on Cape Cod.

December 29. Voted that a committee be appointed to confer with General Lincoln, Collector of Boston, respecting erecting a light-house on Baker's Island, at the entrance of Salem Harbor, and sinking buoys in Salem Harbor.

1796.—*January* 28. Voted that a committee be chosen, Col. Benjamin Pickman, Capt. William Orne, and Mr. William Gray, to petition Congress to have a light-house on Cape Cod; also one on Baker's Island. Capt. Benjamin West and Capt. John Derby were added to the committee.

April 28. Voted that a committee be chosen to purchase Baker's Island.

1830.—Capt. Thomas Perkins, a merchant of Salem, (though not a member of the Society,) by will, gave to the Society the Franklin Building, in Salem, which has been valued by the Society at $13,000.

1851.—Capt. Nathaniel West died in December. He had been a member over 71 years. He left the Society a share in the Derby Wharf, valued by the Society at $5,000. He also left in trust to the Society, to be paid in fifteen years from his decease, the sum of twenty-five thousand dollars, for forming a school for the instruction of youths in nautical and mercantile knowledge. Several donations of one thousand dollars each, and smaller sums, have been presented years back. Its present fund amounts to about forty-three thousand dollars.

1851.—The sum of two thousand five hundred dollars is annually distributed among members, and widows of members, which is received in interest on stocks, and income from Franklin Building.

1855.—Present Officers:—

JOHN DWYER, *Master.* JONATHAN P. FELT, *Treasurer.*
JEREMIAH PAGE, *Deputy Master.* EDWARD BARNARD, *Clerk.*

Very respectfully yours,
JONATHAN P. FELT.

SALEM, MASS., *Jan.* 27, 1855.

ASTRONOMY—THE APPARENT DECLINATION OF THE SUN EXPLAINED.

SALEM, *January* 27, 1855.

Messrs. GRIFFITHS & BATES:—

GENTLEMEN:—I avail myself of the opportunity of accompanying the preceding memoranda of Salem Marine Society, with an account of the *motion of the earth* in her orbit round the sun, which I consider much easier of comprehension than anything I find contained in books of astronomy.

It often happens that all the knowledge of astronomy which seamen acquire is obtained from Bowditch's Navigator. Therein the ecliptic is mentioned as the path the sun seems to describe in the course of the year, which is all that is said about it. Then we have the declination of the sun given in the tables of the book. We have, also, the Nautical Almanac, in which the declination of the sun is there given for every day in the year; so that the impression is upon the mind of the seaman that the sun is in motion, and moves from 23° North to 23° South, and returns again. The increase and decrease of his meridian altitude at a given place, seems to confirm the same. With these *apparent* movements, the mind of the seaman comprehends a movement of the *sun*, and his *apparent* motion to and from the meridian gives additional evidence of his movement; and thus the seaman's mind is strongly impressed with the idea of the *sun's* movement, which is hard to change.

My own description of the earth's movement is as follows: In the first place, the number of degrees contained in the ecliptic, 23° 28′, agreeing so nearly with the W. N. W. and E. S. E. courses, I adopt them, and say, on the 22d March, the equator of the earth and the celestial equator coincide with each other. The earth continues on its course, E. S. E., until the 22d of June, when it reaches its greatest southing, or as we call it, the *sun's* greatest north declination; its course then becomes W. N. W., and continues to September 22d, when the equator of the earth and celestial equator again coincide. The W. N. W. course continues until December 22d, when the greatest northing is reached, or as we call it, the greatest south declination

of the sun is obtained. The E. S. E. course then again begins, and continues until March 22d, when the lines of the equators again agree, as it is the commencement of the year of March 22d; the earth reaching the line of the ecliptic about five-sixth of a mile behind or back of the point started from at the commencement of the year, and thus falling back each year forms what is called the retrocession of the earth, and to form the complete circle of retrograde motion, requires 25,740 years. The earth, at that point, is in the position in which she ends the old and commences the new year, and the point to start from being called the first of Aries, from which the twelve signs of the zodiac are counted.

I have submitted my method of the movement of the *earth* to a teacher of navigation, and he says the knowledge of astronomy, with this method for a foundation, would be acquired with much more facility than by the usual method explained in books of astronomy.

However, as these are only my views, I would not have you publish them until you had submitted them to the inspection of some competent person who should confirm their correctness.

I certainly feel that books of astronomy do not make sufficiently clear the movements of the earth, nor the first point of Aries, for the comprehension of common minds; something further seems to be needed. With the hope that my explanation may prove acceptable,

I am, very respectfully,
Your humble servant,
JONATHAN P. FELT.

[We think our correspondent is correct in his observations; and although nautical astronomers do not mean to teach that the *apparent* motion of the sun is real, we have no doubt that they have left the subject obscured in mystery to the common mind. The science of navigation, like all other sciences, will be more readily comprehended by giving celestial movements their legitimate description.—EDS.]

GOVERNMENT OIL CONTRACT—HIGH PRICES.—It is stated that the contract for supplying the U. S. Government with one hundred and six thousand gallons of winter and spring oil, for the supply of light-houses, has been awarded to Mr. Charles H. Leonard, of New-York, at an average price of $1.99 per gallon for that deliverable on this coast, and $2.12½ per gallon for the lakes.

AN OLD SALT ON SEA-SICKNESS.

Messrs. Editors :—I promised that I would ink some thoughts on the subject of Sea-sickness, believing that the readers of the *Nautical Magazine*, if not themselves voyagers, may have friends to whom my experience may be of some value during a sea-voyage. Let it not be supposed, however, that I design to treat this subject in its physical bearings, professionally, although it would not be out of place, perhaps, for me to describe its effect on the system before proposing a remedy. Sea-sickness is the inversion of the peristaltic motion of the digestive muscles, through the stomach and viscera. The unpleasant sensation which this unnatural action produces, can only be imagined by those who have felt it. The loathing, the shrinking back, the spasmodic action of all the digestive organs, forming a complete system of internal agitation, increased by its own action ; the spasm increasing the irritation, and the irritation increasing the susceptibility to spasmodic action, until the coats of the stomach, and all the abdominal viscera are convulsed, and life itself becomes a burden. When the convulsive retching continues for any considerable time, the deeper secretions are disturbed, and the mouth is literally filled with gall and bitterness. Everything around the unfortunate sufferer heightens the intensity of his agony, and yet without pain. The whole tendency of the internal man is downward, while that of his stomach is upward. I remember many instances in which persons have suffered beyond the power of language to describe, and yet the suffering victim found but little sympathy, more particularly if he happened to be a passenger, inasmuch as sea-sick passengers are more profitable, and less troublesome, than those having well-balanced stomachs. I would not be understood as attributing this want of sympathy to skippers in general, or to them in particular ; but I am well satisfied that, were sea-sickness confined to mariners, physicians, and nautical mechanics, it would long since have disappeared, and be found only on the historic page. An additional reason for this want of sympathy for sea-sick persons on ship-board may be found in the meagre entertainment the subject furnishes as a topic for whiling away the tedious hours at

sea. I remember, in the earlier days of voyaging, to have been on board a schooner bound from Beaufort, N. C., to Charleston, deeply laden with turpentine. This being the most available, if not the most convenient route, we had the company of a ship-builder on board, as passenger. He showed early symptoms of a bilious temperament, by taking up a position on a barrel, at the brake of the quarter-deck, just aft of the fore-sheet, on the lee side. As the wind was both fresh and fair, we soon cleared the harbor, and found a heavy sea on Frying-pan shoals, which caused our craft to plunge heavily and roll deep. By this time our passenger (having taken full possession of his quarters) had determined to settle his accounts on Neptune's own terms, and was transferring his assets, without note or comment. While this was going on in the waist, the skipper was in no very pleasant mood on the quarter-deck; the labouring of the vessel had become dangerous to the spars, and a dreaded mishap charged the skill of all on board to save the vessel. The continued heavy plunges increased by the wind, caused the jaw of the fore-gaff to split off, which deprived it of the projection beyond the end, so essential for keeping it in place against the mast; the gaff at once shot an end forward, splitting the sail, and widening the breach at every roll. The sail was immediately taken in, when it was soon manifest that the vessel fared worse.

The skipper became alarmed, and was anxious for the safety of the vessel, unless the gaff could be repaired, and the sail reset. In this extremity he remembered that he had a mechanic of the right stamp on board, to whom he at once presented the state of affairs. Our hero in the lee scuppers scarcely heeded his tale of forebodings, and manifested the utmost indifference, informing the captain that he could discover not the slightest difference between death from sea-sickness or from drowning. This withering rebuke aroused the skipper, as if from a dream, and he hesitated not to promise immediate relief, if he would but repair the gaff. A bargain was at once struck, and the cup of vinegar was promptly presented to the lips of the patient, who swallowed half of its contents, and announced immediate relief, and at once set about the fulfillment of his part of the contract, the skipper meantime keeping a cup of vinegar at hand, to pro-

vide against a return of the malady. The gaff was soon repaired, with but one or two interruptions by a return of the disease, when the skipper, *alias* doctor, was on hand with the vinegar, which afforded immediate relief. Let it suffice to add, that the sail was soon set, and we made a safe and a short run to Charleston, to the joy of both the skipper and sea-sick builder.

And now, Messrs. Editors, allow me to add, that, if the shipbuilder would adapt his model to the form of the wave, in order to secure stability, in the largest sense in which that term can be applied, and the physicians seek to secure an effectual remedy against the demands of old Neptune (particularly on the uninitiated), while the masters of vessels should seek, not only to obtain passengers, but to make them comfortable ;' and, by administering such advice as would induce them to *think*, at least, that they took an interest in their enjoyment on ship-board, beyond the payment of their passage-money, and that their persons were of more consequence than their baggage, then the travelling public will have less cause to complain.

OLD SALT.

HOW GOVERNOR TAZEWELL SAVED HIS VESSEL DURING A SNOW STORM.—While Ex-Governor Tazewell, of Virginia, was acquiring the stock of practical knowledge for which he became distinguished, it was at one time his misfortune to be found on board a small bay craft on the Chesapeake, too far distant from a harbor to secure its protection before dark. Towards the close of the day it commenced snowing, with every indication of its continuance through the night. To enlarge the bulk of discomfort, there was neither time-piece or compass on board, by which to measure the length of his tacks in beating to windward, or to direct his course against the opposing power of the biting blast. It was but too clearly manifest that he must lose the vessel, and perhaps the lives of those on board, unless some expedient could speedily be devised. In this emergency his prolific genius was quite commensurate to the task, and accordingly a barrel was provided, with a spicket near its base, and being filled with water, was allowed to discharge itself into a bucket, which, when full, was emptied again into the barrel, and the empty bucket reset to be refilled, as at first, while each discharge was the signal for putting the vessel about on the opposite tack. This course was pursued, and the tacks thus equalized, not only during a long night, but until they were enabled to discover their position by the light of the succeeding day.

ATLANTIC PACKET-SAILING.

It always gives us pleasure to note the finer performances of shipping on the buoyant highway of commerce, inasmuch as our predilections for nautical improvement transcend those for any other equally elevated object in the whole range of perfective industry. While the members of every other profession, pursuit or calling, among enlightened men, are fully resolved to advance their interest and their happiness, by urging their resistless way forward upon the royal highway of progress towards perfection, we are bound to follow close in their wake with the science and art of ship-building. We look forward with pride upon the vast domain of maritime improvement, which has yet to be subjugated by the perfecting hand of the architect and the navigator. The magnitude of our task is as vast as the waters of the globe, and as diversified as its oceans, seas and gulfs, its lakes, rivers and sounds.

We sincerely hope the day is coming, when the average performances of our finest ships shall be attained by any upon the seas; when every vessel engaged in commerce shall be as strong and seaworthy as the best now upon the ocean; and when life and property shall be as secure upon the water as upon the land. Then may we trust, that the future conductors of a Nautical Magazine shall be able to point out even more to be accomplished, in order to keep pace with unfolding perfection in the sister arts and sciences: and may they be able to say, that they meet a *full measure* of appreciation of their noble labors at the hands of the commercial men of their cotemporary age.

The semi-clipper ship "Dreadnought," commanded by Capt. S. Samuels, of New-York, left New-York on her first voyage, December 15th, 1853, and has since then completed eight passages, arriving here on the 28th January, 1855.

From her first to her last passage, 249 days have been spent in port, and 184½ at sea. Four eastern passages have consumed 86½ days, and four western passages, 98 days. Average time of eastern passages, 21 days and 15 hours; average time of western passages, 24 days and 12 hours, from dock to dock.

By the courtesy of her able and accomplished commander,

Capt. Samuels, we have been put in possession of the "Dreadnought's" log, on her recent remarkable passage. We have also seen a painting of the ship at sea, approaching the English coast, in the night, that was executed in Liverpool, and is decidedly one of the finest artistic productions of the kind that we have noticed for many years. This splendid example of marine painting is the property of Capt. Samuels, and is only commensurate with the spirit and generosity of that gentleman. We hope to be enabled to furnish the draught and particulars of the "Dreadnought," from her builder, in the next number.

LOG OF THE SHIP "DREADNOUGHT,"

FROM NEW-YORK TO LIVERPOOL.

Date.		Courses.	Dist.	Winds.	Lat. W.		Long.	
Nov.	21	E. by S.	120	N. W. by W., moderate.	40°	8′	71°	20.
	22	E. N. E.	57	S. E., strong.	40	30	70	8
	23	E. by N.	225	South, (moderate).	40	5	65	5
	24	E. N. E. ½ N.	300	S. W. "	43	20	58	56
	25	do.	175	W. S. W. "	44	8	55	00
	26	do.	125	E. N. E. "	44	50	52	22
	27	do.	250	S. S. E. "	46	33	46	50
	28	do.	263	S. W. by W. "	48	25	40	50
	29	E. N. E.	240	West. "	49	22	34	15
	30	E. by N. ½ N.	270	N. N. W. "	50	20	27	55
Dec.	1	E. by N.	242	N. W. "	50	50	21	15
	2	E. ½ N.	222	N. N. W. "	51	4	15	15
	3	do.	212	N. N. W., brisk.	51	18	9	32
	4	do.	320	...				
			3,071					

At noon, on the 4th, took a pilot off Point Lynas; was detained eight hours for want of water on the bar; arrived in the Mersey, at 10, P. M.; thus making the passage in 14 days, 4 hours, apparent time.

Deducting 8 hours for detention of tide at the bar, and also deducting the difference of longitude, 4 hours and 45 minutes, gives the mean or true time of passage, 13 days, 11 hours and 15 minutes.

Distance sailed, as above, 3,071 miles; average speed for the passage, 9½ miles per hour.

On the homeward passage, from Liverpool, the "Dreadnought" left the Mersey, 6th January, at 8, A. M., with light airs. At 2, P. M., the clipper ship "Lightning," in tow of two steam-tugs, came up and passed the "Dreadnought," standing out to sea. On the next day wind was W. S. W., blowing briskly; at noon, the "Dreadnought" met the two steam-tugs returning from the "Lightning," which they had towed, out of sight, to sea. At sundown, same day, weather clear, saw the

topgallant-sails of the "Lightning," no other sail being in sight. On the following day, viz., the 8th January, at 5, A. M., the "Dreadnought" had so far overhauled the "Lightning," as to be able to cross the bow of the latter, when the former tacked ship after her. The wind was W. S. W. all day, with strong royal breezes. By 4, P. M., the "Dreadnought" had beat the "Lightning" hull down astern, and saw no more of her. The "Lightning" was built by Donald McKay, of East Boston; and the "Dreadnought" by Currier & Townsend, of Newburyport, Mass., and is owned by David Ogden, Esq., of New-York.

"FLOATING MERCANTILE SCHOOLS."

COPY OF A MEMORIAL TO CONGRESS, 1854, BY ROBERT B. FORBES.

To the Honorable the Senate and House of Representatives in Congress assembled:

Your memorialist, having for a long time seen the necessity of raising the standard of American seamen, and of encouraging young men to go to sea, particularly in the merchant service, respectfully prays your honorable bodies to establish floating schools in our principal seaports, and on one of the lakes, for the partial education of seamen.

Your memorialist, believing that the seamen of the United States must always be the "motive power" whereby the success of our commerce is to be promoted, offers the following suggestions, to show that the education of young men for seamen comes strictly within the authority and power of Congress. The importance of schools for the preparation, not to say education, of youth for the merchant service, cannot well be over-estimated. At the present time, and for a long time past, the scarcity of seamen has been notorious. In ships engaged in foreign trade, not more than from one-fourth to one-fifth of the crews have been Americans, although a much larger proportion may have had American "protections," many of which are obtained by false swearing, and many by purchase from *bona fide* Americans.

Many ships are detained when ready for sea by the want of seamen of any nation, and something must be done in order to promote the growth of American seamen. Many ships have been lost during the past winter for want of good seamen.

As a general rule, it may be truly said that higher wages, better fare, and better quarters, would induce foreign seamen to sail under our flag, and that the supply is not equal to the demand, and that the large increase in our foreign tonnage and the drain to Australia and California, are the main causes of the evil so loudly complained of. Whatever may be the reasons, we are sure as to the fact of the scarcity of American seamen. The supply must be encouraged by the establishment of floating schools. This can only be done effectually by Congress, and it ought to be done for the following reasons: Congress regulates commerce exclusively, both on the ocean and on the internal waters of the United States; seamen are regulated by general laws, and not by State or by municipal laws; Congress regu-

lates the number of passengers that may be taken on board of any ship; Congress regulates and defines how many square feet shall be allotted to each immigrant, and what amount and kind of food shall be provided for him, and the sanitary regulations of passenger ships are specially under the care of Congress; Congress regulates the number of American seamen to be taken in our ships, and enacts laws for the safety of passengers on the rivers and the lakes of the United States; the explosion of a steam boiler on the water is a matter for Congress to punish; Congress lights the highways of the seas, and the headlands of the coasts; Congress educates young men for officers for the army at West Point, and officers for the navy at Annapolis; Congress extends her protecting care over the seas, and liberally dispenses her money for the good of commerce, (the great balance wheel of the nation,) in all ways excepting the encouragement of education for young seamen!

Every citizen, from the Atlantic to the Pacific, from Oregon to Mexico, is more directly interested in carrying the produce of his industry to foreign climes than in any other portion of our common weal.

The growers of cotton, tobacco, wheat and hemp, are equally interested with the ship owner in the great commercial brotherhood; their efforts will be comparatively valueless, unless they can safely carry the produce of their industry abroad, and bring back the golden harvest. This ought to be done mainly by our own ships, and ought to be done chiefly by our own seamen—by men who have some common bond, some vital interest in the honor of the flag.

It is sometimes said that Congress has no right to educate any particular class of youth—seamen, engineers, manufacturers. Your memorialist sees no analogy between the seamen and operatives on the land.

Seamen are not protected by State or by municipal laws, as the manufacturer, the engineer, the agriculturist is; he cannot leave his helm and go to the polls to exercise that dearest right of freemen, the right to vote money for his own education, or to make laws for the government of the community in which he lives; he is, in this respect, expatriated; he is an exile, and he seldom remains on shore long enough, even when he comes to be a captain, to vote, or to feel the benefit of State laws. The manufacturer, the agriculturist, the machinist, is not compelled by Congress to employ Americans. A steamer may not on the waters of the United States explode her boilers without being called to account under laws made by Congress; but the manufacturer or engineer on shore may explode his boiler and crowd his manufactory to suffocation, and Congress will not interfere. Artisans are, on the land, under State or municipal laws; they freely give them a start in life, and freely assist to give them an impetus in the vocation which they may select on shore; but seamen are not thus protected and educated; seamanship is nowhere made a part of the teaching of the schools!

The young seaman must leave the endearments of home and embark on the troubled waters of life, without any knowledge of his adopted profession; he is thrown upon the ocean, oftentimes among thieves and villains, the refuse of foreign lands, inadequately protected by his country; he is repudiated by State and municipal laws, and is dependent solely on his own energies, and on the accidental care of a kind captain or owner for his success in life, and yet he is expected to help maintain the honor of the flag, in peace or war—in peace, by showing himself to be a good seaman, a good navigator, and a good agent, without any special education—and in war, by spilling his blood for the flag which has neglected his best interests, his Education! How can he be expected to do this honorably to his

country, or satisfactorily to himself, unless he is encouraged and protected by Congress? You have authority to regulate the revenue of the country, the safety of the public who may travel by water, the comfort and health of foreign paupers coming to our shores to be made citizens of in five years; you educate officers for the army, and for the navy; you provide hospitals for the sick seamen, and, in this respect, you recognise him as being under your special care; you make peace, and you declare war, but you do nothing for the education of young men for seamen; you say to ship-masters, "you must not flog any seaman," "you must regulate your ship according to our laws, and not in accordance with your own judgment."

The vehicles of trade, the ships, are regulated by Congress in all things excepting in the education of the "motive power" by which they are to maintain the "supremacy of the sea!"

Your memorialist suggests that seamen are the main springs, the balance wheels, by which the success of our ships of war, and our ships of peace, is to be maintained. If you educate young men for the sea, and make them feel the necessity of obedience, you may well dispense with stringent laws for their government at sea.

The first thing to be done is to prepare them under judicious tutors, in navigation and seamanship, for their future calling, and this can only be done by establishing floating schools in our principal seaports. Your memorialist proposes one or two plans to carry out this object, and offers certain estimates of the cost, which are herewith respectfully submitted, marked from No. 1 to No. 3, inclusive, and particularly specified in a note at foot.

Your memorialist is not a ship owner, and has no other interest in this matter than to give his time and experience, as a merchant and as a seaman, to the good work which shall most directly tend to elevate the standard of American seamen, and reduce the risks of the sea. It will be seen by the figures that

The cost of nine ships, at $30 per ton, is..............	$136,500
And the cost of maintaining them....................	286,826
Making for the first year...............	$423,326

or say, *four hundred and fifty thousand dollars*, as the sum which your memorialist deems necessary for the establishment of nine ships. Your memorialist recommends that these schools be organized by Commissioners, to be selected from among practical merchants at the several ports named, who, with the approval of the Collector, shall appoint the officers from among practical merchant seamen, and generally organize the schools, and that the Collector be authorised to draw on the Treasury for the cost and maintenance of the schools. Your memorialist recommends that boys shall only be admitted between the ages of thirteen and sixteen, and for not less than three, nor more than six months, at any one time, excepting in certain cases mentioned hereafter; and that the commander of the school may, at any time, with the consent of the Collector, discharge any boy for misconduct, or for any physical incapacity.

Boys who may be qualified to go to sea, and who shall have been on board the ships not less than three months, shall be furnished, if necessary, with clothes of the value of forty dollars; and all who may be sent on board the school ship destitute of clothes, shall have clothes furnished them by the captain. Boys who may be fit to go to sea, after not less than three months' schooling on board any ship, to be furnished with a certificate on parchment, setting forth their names, place of birth, age and quality; said

certificate entitling the party to whom it shall be given, to be considered an American Seaman, and to a place on board any school ship of the United States, on his return from a voyage, and for a period of not less than one or more than three months. Penalties to be enforced against all boys who may sell or give away their certificates with a view of defrauding the United States. No master of a vessel, or any other person entitled to enlist young men, to receive any one who may have served in a school ship without his certificate, or the loss of it satisfactorily accounted for.

Any boy deserting his ship, or absentiug himself without leave from the commanding officer, shall forfeit all rights under his certificate, and all masters of vessels shall have a right to retain the certificates in his possession, and on the discharge of any youth holding one, shall endorse on it the fact, as to his time of service and general good or bad conduct.

In case of the loss of certificates, by shipwreck or other casualty, due proof of which must be exhibited, young men shall be entitled to new certificates; and to this end a register must be kept, at all Custom Houses, of all boys who may have been discharged from school ships. Boys who may have been honorably discharged from school ships shall be forever exempt from hospital tax, and also for the time previous to their discharge, provided a certificate has been granted to them. Masters or owners of ships wanting boys from the school ships, shall apply to the commander at least forty-eight hours before the clearance of his ship, and shall be furnished with such a number as he may desire, provided they are ready and willing to go, and they shall receive not less than six dollars per month for their first voyage, to be paid to the parent or guardian at the termination of the voyage, or to the boy himself, if he have no parent or guardian at hand to receive the same—less any charges against him on the ship's book.

No ship-master shall receive on board of his ship, in a foreign port, any boy who may have served in a school ship, without his certificate, duly endorsed by the captain with whom he last served; and no captain shall discharge any school ship boy in a foreign port without the written consent of the consul, or other public agent.

Every captain discharging a school ship boy, shall note the same in the ship's log book, and keep a general record of his conduct.

For every school ship boy taken on a voyage round Cape Horn or Cape of Good Hope, owners of ships shall pay into the hands of the Collector where the ship may arrive, two dollars per month for the time he may have served, and for every shorter voyage, one dollar per month, for the benefit of floating schools; any month entered upon to be considered a full month. The school ships to be governed by such rules as the Secretary of the Treasury, or the Collector of the ports where they may be located, shall determine; and any parent or guardian who may send a boy on board shall agree, in writing, not to interfere with the regulations. The hospitals of the United States to be open to youth belonging to, or honorably discharged from, the school ships, free of all expenses, and at all times, as other seamen.

Young men from school ships, under eighteen years of age, and all others under eighteen, sailing on foreign voyages, shall be lodged separate from the men, and shall be made, in the voyages beyond the equator, to keep a log; occasionally to take the sun for a meridian, or other altitude, and shall be subject to such other regulations as Congress may make in regard to their education and discipline; and in case any young man holding a certificate shall disobey orders, the captain, after due entry in the log book, may deprive him of his certificate, and shall return the same duly endorsed, with his reasons for so doing, to any Custom House where the ship may ar-

rive in the United States. It shall be the duty of every master to give such instruction to all young seamen as the circumstances of the voyage will admit; and any youth, under eighteen years of age, who shall not have been instructed to keep a common log during any voyage across the equator, or not have been encouraged to do so by the captain, may claim his discharge in a foreign port, with the consent of the consul, and be entitled to ship in an American vessel. Boys not having any parent or guardian, and who may be sent to the school ship by any city or town government, to be provided with suitable clothes by the same, at the discretion of the commander of the school ship, sufficient for his personal comfort for the time. The commander of any school ship may, at his discretion, reject any applicant, by and with the consent of the Collector.

The commander shall keep a record of the names, age, and quality of the youth under his care, and shall make quarterly returns to the Secretary of the Treasury through the Collector, of all admissions, rejections, and honorable discharges, and of the expenses of the ship. The commander and the teachers and other officers, shall give instructions in reading, writing, the ordinary rules of arithmetic, and in navigation and practical seamanship, and at all times maintain strict obedience.

The commander shall post up at the Custom House where the ship shall be located, a complete list of all the boys who may be ready to send to sea, and on the application of any master or owner of a ship, he shall supply him with as many as he may deem proper, according to the list, and furnish them with clothes, not exceeding in value forty dollars, including what the boy may have had from the school ship previously; and if this be not sufficient, the captain applying shall agree in writing to give him a sufficient supply to begin the voyage, and charge the same against his wages in the ship's books. Any master of a ship who shall receive any boy from a school ship shall sign a receipt for his certificate, specifying the date of his reception and the voyage for which he may have engaged, and shall agree therein to give him instruction according to such forms as may be made by the general regulations of the schools.

Finally, your memorialist, being desirous of suggesting another plan whereby the growth of American seamen may be promoted, would call your attention to paper marked No. 4, wherein it is proposed to compel ship-owners to take young men from school ships in ports where they may be established, or, at their option, pay into the Treasury for the benefit of school ships a certain sum, as stated therein, for boys omitted to be taken; it being understood that the commander of the school ship must always advertise or give notice of the number of boys he may have ready to go to sea.

Your memorialist prays that these suggestions may have the favorable consideration of your honorable bodies, and that a bill be passed for the encouragement of seamen.

And, as in duty bound, your memorialists will ever pray.

R. B. Forbes.

Washington, *April* 21, 1854.

No. 1.

Estimate of cost of nine school ships and maintaining them, exclusive of the cost of maintaining the scholars, said ships to be established at the under-mentioned ports, to wit:

New-York—one ship of 800 to 1000, and one of 300 to 500 tons.
Boston—one do. of 600 to 800 tons.

Portland, Charleston, and Lake Erie—each one of 300 to 500 tons.
Baltimore, Philadelphia, and New-Orleans—each one of 400 tons.
Making an aggregate on the average tonnages named, of 4,550 tons; to cost for good second-hand ships, say $30 per ton, ready for use say $136,500.

Salaries—9 captains, at	**$1200 per annum,**			**$10,800**
9 mates, at	**600**	**"**		**5,400**
9 2d mates, at	**400**	**"**		**3,600**
9 boatswains, at	**300**	**"**		**2,700**
9 cooks, } 9 stewards, } 18 —	**216**	**"**		**3,888**
35 seamen, at	**240**	**"**		**8,400**
9 teachers, at	**1000**	**"**		**9,000**
9 assistants, at	**500**	**"**		**4,500**
Total, 107 souls.				**$48,288**
Cost of captains' and other salaries:				
Maintaining 45 first class, at 50c. per day,			**$8,212**	
" 62 second " at 20c. "			**4,526**	
Fuel at $200 for each ship,			**1,800**	
Keeping ships in order, say			**10,000**	
				24,538
Cost of maintaining nine ships, say				**$72,826**

EE.

R. B. Forbes.

No. 2.

Estimate number of boys that may be expected constantly to be on board of the nine ships, and their maintenance:

New-York—large ship, 310 boys.
" small " 130 "
Boston— " " 200 "
Baltimore, Philadelphia, and New-Orleans—**each 130.**
Portland, Charleston, and Lake Erie—each 100.

Making 1,330 always on hand, to be fed at a cost of 20 cents per day,	**$97,090**
Supposing the United States allows to each for clothing, hammocks, &c., and that double the standing number are to be annually provided, 2,660, at $40,	106,400
Books, stationery, &c.,	10,510
Annual cost of maintaining boys,	$214,000

EE

R. B. Forbes.

No. 3.

Recapitulation of cost of maintaining ships:

Salaries—Captains', teachers', &c	48,288
Provisions for the same	12,738
Fuel	1,800
Keeping ships in order	10,000
Provisions for 1,330 boys, at 20c. per day, 365 days,	97,090
Clothing for 2,660 boys, at $40	106,400
Books, stationery, &c.,	10,510
Annual cost of nine school ships,	$286,826

EE.

R. B. Forbes.

No. 4.

Memorandum in regard to the organization of floating schools, supposin that owners of ships are to be obliged to take young men from the schools Owners of ships in all ports where schools are established by Congress, to be obliged to take boys upon the following basis:

Fo vessels from	100 to 300 tons,	one boy.
	300 to 500 "	two boys.
	500 to 700 "	three "
	700 to 900 "	four "
	900 to 1200 "	five "
	over 1200 "	six "

Provided, that the commander of the school ship shall give notice by posting up at the Custom House, a list of the number and names of boys he may have ready to go to sea, sufficient in number to supply the ship 'about to clear.

Provided, that the owner may, at his option, pay into the Treasury of the United States, for the benefit of school ships, a certain sum hereinafter fixed, in lieu of taking boys, to wit:

For every boy omitted to be taken on a voyage round Cape Horn, or the Cape of Good Hope, the sum of ——— dollars.

For every one omitted in a voyage to Europe, or to any port North of the Equator, ——— dollars.

For every one omitted on a voyage across the Equator, and not round Cape Horn, or the Cape of Good Hope, ———dollars.

For voyages commencing in California, and extending round either of these Capes, ——— dollars.

For voyages from the same to China, or to any port not round the Capes ——— dollars.

For any voyage across the equator in the Pacific, not round the Capes ——— dollars.

Provided, that coasting vessels in our own territories shall not be obliged to take any, and that European packets, or passenger ships, shall not be obliged to take any, and that the voyage from the United States in the Atlantic to any port in the Pacific shall be considered as a foreign voyage,

and that the law shall apply only to ships sailing from ports where there may be a school ship. Said penalty to be payable on the clearing of the ship, and according to the port cleared for, whether the ship go there or not.

EE.

R. B. Forbes.

Recapitulation of Documents referred to.

No. 1. Estimated cost of maintaining nine school ships, exclusive of scholars, amounting to $72,826 annually.

No. 2. Estimate of the number of boys that may be expected to be constantly in the schools, and for clothing to those who may be permanently and temporarily on board, amounting to $214,000 per annum.

No. 3. A recapitulation, showing the cost of maintaining nine schools per annum to be $286,826.

No. 4. A plan for compelling owners of ships to take boys only from the schools, or to pay for not doing so, for the benefit of floating schools.

EE.

R. B. Forbes.

R. B. Forbes, Esq.

Dear Sir:—The Report of the Committee of which you were Chairman, in relation to the safety of Navigation, and the Memorial attached, were read before the Trustees of the Boston Marine Society on Tuesday, Jan. 2. The Report an d Memorial were unanimously adopted, and a wish was expressed that copies of those documents should be placed in the hands of the members of Congress from Massachusetts, and other States interested in the navigation of the Atlantic.

I am, dear Sir, respectfully yours,

John S. Sleeper,

President B. M. Society.

Boston, *Jan.* 3, 1855.

The famous clipper ship Sovereign of the Seas recently made the passage from London to Sydney, Australia, in 84 days, encountering in the meantime a terrible storm, which carried away everything above her lower masts. The damages were repaired in six days. The best day's work was 410 knots, although she occasionally travelled at the rate of 22 knots an hour. The Red Jacket, built at Rockland, made her first trip from Liverpool to Melbourne, we believe, in 79 days, and is said to have beaten the world on that route.

NOTICES TO MARINERS.

Pollock Rip Light-Vessel.—The Pollock Rip light-vessel, having been thoroughly repaired and fitted with a new lantern and illuminating apparatus, will resume her station, in place of the vessel at present stationed at that place, on or about the 15th inst. This vessel is painted red, with the words "Pollock Rip" in large white letters on each side. The following are the dimensions of the vessel, viz.:—Length, 97 feet; breadth of beam, 24 feet; height of rail from the water, 8 feet; length of masts, 50 feet. The mast-heads are painted white. Hoop iron day mark painted red. One light, produced by eight lamps and reflectors, will be shown at an elevation of 31 feet from the water line, and should be seen, in ordinary states of the atmosphere, from an observation 15 feet above the level of the sea, at a distance of 11 nautical miles.

Boston, *December* 10, 1854.

Newburyport Buoys, Mass.—The following buoys have been recently placed to mark the approaches to Newburyport harbor:—

A red buoy South-east of the North breaker, in 2½ fathoms at low water, with the Eastern light bearing W. by S.

A black buoy inside of the bar, in 10 feet at low water, with the Eastern light bearing W. S. W.

To enter Newburyport harbor, run for the lights, leaving the red buoy half a cable length on the starboard hand. When up with the buoy, the chimney on the North part of the light-keepers house will be hid by the Eastern Lighthouse. Running on this range, leave the black buoy on the port hand, and run for the North point of Plumb Island, which bears N. W. by W. ½ W. from the black buoy, or run from the Black Rocks, which bear N. W. by W. from the black buoy. Bearings are magnetic. By order of the Lighthouse Board.

Boston, *December* 15, 1854.

Extract from a communication addressed to the United States Consul at Para by the Captain of the port of the same, dated November 18, 1854.

Experience having proved that it is much more convenient that the signals heretofore made in the village of the Salinas for the vessels which touch at that point, to receive pilots, should be made near the lighthouse, on account of being more distinctly seen from on board the vessels, the Captain of the port has caused a flag-staff, forty (40) feet in height, to be placed at the distance of fifty-eight (58) fathoms E. N. E. of the said light-house, where the signals will be made with seven (7) different flags, as follows:—

No. 1. A red flag, with white swallow-tail.
2. A white flag, with a cross through it.
3. A flag, upper half red, lower half white.
4. A flag, all blue.
5. A flag, inner half white, outer half red.
6. A flag, blue and white chequered.
7. A flag, red and white chequered.

No. 1. Signifies to vessels arriving at Salinas, that a pilot is there, and a boat to take him on board.
No. 2. That the pilot goes on board immediately.
No. 3. That the tide will not allow the pilot to embark.
No. 4. That the pilot will go on board before noon.
No. 5. That the pilot will go after noon.
No. 6. That the pilot will go on board at midnight.
No. 7. That the pilot will go on board after midnight.

When on board the vessels a bonfire is seen in the village of Salinas, it is understood that there is a pilot, and a boat to take him on board as soon as the tide will allow. When two bonfires are seen, it is a signal that there is a pilot, but no boat to take him on board. When no bonfire is seen during the night in

the village, the vessels having appeared during the day, it signifies that there is no pilot at the station.

Vessels which arrive off that station wishing a pilot, should hoist a red flag at either the fore or mainmast head, but never at the peak.

When on board the vessels it is known by the signals made on shore that the tide will not allow the pilot to go off, vessels not wishing to anchor in six or seven fathoms, keeping the lighthouse bearing southeast, should lie off and on, standing out during the flood, and in shore during the ebb tide.

Vessels being northwest from the light can receive pilots more promptly than in any other position. The pilots embark at high water, which, at the full and change of the moon, is, on the coast, at thirty minutes past seven, (7h. 30m.), and at the place where the vessel should anchor, fifteen minutes past eight o'clock, (8h. 15m.)

For information between the village of Salinas and the lighthouse, two flags will be used at the said village; one of which is all white, and the other red, with a white square in the centre.

The white flag hoisted on the staff in the village, signifies that there is both pilot and boat.

The red flag, with white square, signifies that there is a pilot but no boat.

The two flags together, are a signal that there is no pilot at the station.

Masters of vessels need pay no attention to these last named signals, as they are merely made for the information of the keeper of the light, who also has charge of the signals.

HENRY B. DEWEY,
PARA, *November* 23, 1854. *United States Consul.*

BREMEN, *December* 23.—The Bremen light-vessel, No. 1, stationed at the entrance of the Weser, was dismasted in the night of Dec. 18th, and has been towed into this port. She has been replaced by another light-ship.

IN consequence of the changes of the Bar, at Ipswich, Mass., the lights no longer serve as a range. Changes are proposed at an early day, due notice of which is promised.

THE Light-ship from Shovelfull Shoal, arrived at Edgartown, 1st inst., to undergo repairs.

NEW NORWEGIAN LIGHT-HOUSE.—The Royal College of Commerce announces that, according to an official publication of the Norwegian Marine Department, a first class Light-house, after the system of Fresnel, which has been erected upon the North-west Cape of the Island of Egero, near Egersund, would be lighted on the 16th instant, and continue to be lighted thereafter at the hours customary for other Norwegian Light-houses. The light is visible from all the seaward points of the compass, and in order to be distinguished during the day, the tower is painted red. It stands in Longitude 5° 48′ 15″ East of Greenwich, and in North latitude 58° 24′ 45″. The lantern is 152 Norwegian feet above tide, and 92 feet above the ground. The capacity of the light is 5 to 6 miles, (of 15 to a degree.)

STOCKHOLM, *Nov.* 17, 1854.

BALTIC—KIEL FIORD—RED LIGHT AT DUSTERNBROOK.—Official information has been received at this office, that notice has been given by the Danish Government, that, in the course of the present month, a red light will be established at Dusternbrook, in Kiel Fiord.

The light will be exhibited on a small iron tower at the bathing establishment in Dusternbrook, and will be visible on the starboard hand, to ships approaching Kiel, at the distance of 6 miles.

This notice affects the following Admiralty charts: Baltic, No. 2282; Kiel Bay, 2117; also the Danish Pilot, p. 342, and Kattegat Light-house List, No. 105 a.

OFFICE LIGHT-HOUSE BOARD, *Jan.* 6, 1855.

CAPT. NYE, of ship Mount Vernon, of New-Bedford, at Honolulu, makes the following report:—

On my passage from the Bonin Islands to the Japan Sea, in April last, I passed between Pinnacle Island (lat. 29° 44′ N. lon. 130° 10′ E.) and Jakanosima. The passage has the appearance on the charts of being a safe and easy one; but there are two clusters of pointed and rugged rocks, of some thirty or forty in each, lying about midway of the passage, distant one mile from each other, and each cluster about half a mile long. They lay N. E. and S. W., directly in the track of vessels passing in and out. They are from five to forty feet above water, and are not laid down on any charts that I have seen. I consider them dangerous rocks, more especially as many vessels will be going to the Japan Sea the coming season, and some may go through that channel. I will venture to say, from my own and other's experience, that but little dependence can be placed in the charts of that part of the Pacific Ocean and Yellow Sea.

Capt. Boggis, of the barque Robert Syers, at Sydney, N. S. W., 9th Oct., from San Francisco, reports having passed close to Elizabeth Reef, on which the Rosetta Joseph, and Tyrian, were lost. On the chart the reef was wrongly placed; it is in lat. 29° 56′ S. lon. 158° 8′ E.

Capt. Nelson Crocker, of the ship Raduga, reports, that Oct. 14th, 1850, tacked ship on the edge of a sunken rock, in lat. 1° 55′ S., lon. 107° E., with four fathoms of water on it, 250 feet long and 70 broad. Gasper Island not in sight at the time from the top-sail yard.

Dangerous Rock.—Captain Webber, one of our pilots, (says the *Gloucester Telegraph*,) informs us that there is quite a dangerous rock lying at the entrance of our harbor, and directly in the track of vessels going in and out, which is not laid down on any chart, and but little known. It is situated 176 fathoms, S. W. by S., by compass, from the Eastern Point Light-house, and has seven feet water on it at low water, 13 feet around it, and 10½ inside. Captain Webber also informs us that there is quite a large piece of flat ground, about 150 fathoms from Dog-Bar buoy, and N. W. by W. from the Point Light-house, on which there is but 12 feet of water.

Electric Telegraph Across the Sound between Denmark and Sweden.—Official information has been received at this office that a Sub-Marine Telegraphic Cable has been laid across the Sound, from Vedbeck, on the coast of Siælland, (10 miles to the Northward of Copenhagen,) to Hveen Island, from thence to Hillesborg, on the coast of Sweden, (3 miles to the Northward of Landskrona,) notice is hereby given, that, in order to point out the position of the said cable, the following beacons have been erected:

At Vedbeck, two beacons, standing W. ¾ S., and E. ¾ N., of each other, show the direction of the cable as far as the South point of Hveen; and

At Hillesborg, two similar beacons, bearing E. N. E. ½ E., and W. S. W. ½ W. of each other, show its direction from its South Point of Hveen to the Swedish shore.

Between Vedbeck and Hveen the line of the cable is marked by several small floating beacons, each carrying a pole with a flag; while, at the South end of Hveen, a larger floating beacon marks the junction of the two branches of the cable.

Mariners are requested not to anchor between those marks on the above lines of bearing, lest they should damage the Electric Telegraph Cable, or lose their own anchors; and they are specially enjoined to comply with any directions they receive from the pilots for avoiding both the cable and its beacons.

The above bearings are magnetic.

Office Lighthouse Board, *Jan.* 22, 1855.

Mediterranean—Spain—Revolving Light on Cape San Antonio, in the Province of Alicante.—Official information has been received at this office, that the Spanish Government has given notice, that, on the first day of January, 1855, a Revolving Light will be exhibited on the old tower of Cape San Antonio, in the Province of Alicante, in lat. 38° 48′ 30″ N., lon. 0° 12′ 42″ E. of Greenwich.

This light will revolve every half minute, and, being 580 feet above the level of

the sea, will be visible, in clear weather, from the deck of a moderate-sized vessel, at the distance of 19 miles.

Office Lighthouse Board, *Jan.* 22, 1855.

Notice to Masters and Shipping Merchants.—The undersigned having been appointed Agents at New-York, for Boston Marine Insurance Companies, hereby notify masters of vessels owned at the East, and insured, or likely to be insured at Boston, in the event of shipwreck or disaster in the vicinity of New-York, or on the Jersey or Virginian coasts, to telegraph or otherwise advise the undersigned immediately, that assistance may be dispatched to them; also, in all claims for damages to vessels or cargo, to confer with the Agents, that their claims may be settled amicably, and with mutual satisfaction.

Johnson & Higgins, 35 Wall-street.

Wreck off Minehead, Bristol Channel,
Trinity House, *London*, *Jan.* 9, 1855.

A Green Buoy, marked with the word *Wreck*, has been placed 20 fathoms North of a vessel sunk off Minehead, in the Bristol Channel.

The Buoy lies in 8¼ fathoms at Low Water Spring Tides, with the following marks and compass bearings, viz.:

Foreland Point, a ship's length off Hurlstone Point, N. W. by W. ¼ W.
Minehead Pier.........................S. S. W.
Nash High Lighthouse....................N. ¾ E.

The Beacon on Great Fawn Bar was destroyed by the storm of the 21st. The Bar is now marked by a Buoy only.

Trieste, *December* 7, 1854.

New Floating Beacon in the Curzola Channel.—In order to prevent vessels getting ashore on the shoal of Lusnac, lying between the rock of Badia and the rock of Lusnac, at the East entrance of the channel, between the islands of Curzola and Sabioncello, there has been placed over the centre of the shoal, where there is only five feet depth of water, a floating beacon of a quadrangular pyramidal form, the upper part of which is painted red, and the lower white.

To avoid the shoal, vessels must keep twenty fathoms distant from the sea.

Copenhagen, *November* 11, 1854.

Light at Dusternbrook, in the Bay of Kiel, and Alterations in the Harbor Light of Kiel.—The light at Dusternbrook, in the Bay of Kiel, will be exhibited, for the first time, on Wednesday, the 27th inst., in the evening, half an hour after sunset.

It is a fixed light, with a sidereal apparatus and a red lamp glass, imparting a reddish tint to the light. The height of the flame is 19 feet above the ordinary level of the water.

The light illumines the horizon from variation S. W. ¼ W., through E. to N. by E., with a range of light of about six miles, and burns every night throughout the year, except when the bay is covered with ice.

The lantern is placed in an iron tower of the form of a column, which is 14 feet high, painted red and white, and erected at the East point of Dusternbrook, N. E. of the bathing establishment of the place.

Simultaneously with the lighting of this Light, the Harbor Lantern of Kiel will be altered to exhibit a Green Light.

Removal of Beacons in the Sound During the Winter, and Proposed Increase of Floating Beacons.

Copenhagen, *December* 12, 1854.

The Floating Beacons in the Sound will be removed this year as usual, on the 21st., unless drift ice make an earlier removal necessary. That the number of Floating Beacons during this winter will be increased from five to thirteen, and placed as follows:—

At the N. E. end of the Stubben, a Float ng Beacon, having a black pole, with two brooms tied upwards, instead of the buoy No. 7. At the East side of the Stubben, called "Stubben Tail," a Floating Beacon, with one broom tied upwards on a black pole, like the one placed there during the Summer season. At the North end of the Revshalen, a Floating Beacon, with two brooms tied upwards on a black pole, instead of the Buoy No. 8.

In the King's Deep.—In the centre of the Middel Pulten, a Floating Beacon, with a ball or basket on a white pole, like the one placed there during the Summer season. At the West side of the Middel Ground, a Floating Beacon, carrying two brooms, tied upwards on a white pole, like the one placed there during the Summer season.

In the Hollænder Deep.—At the N. E. end of the Middel Ground, a Floating Beacon, carrying three brooms, tied upwards on a black pole, instead of the Nun Buoy, No. 5. At the East side of the Middel Ground, a Floating Beacon, with two brooms, tied upwards on a black pole, instead of the Nun Buoy, No. 4. At the South end of the Middel Ground, a Floating Beacon, carrying a ball on a pole, painted with black and white streaks, instead of the Nun Buoy, No. 3.

In the Drogden Channel.—At the East side of the North Rose, a Floating Beacon, with three brooms, tied upwards on a black pole, like the one placed there during the Summer season. At the East side of the South Rose, a Floating Beacon, with two brooms, tied upwards on a black pole, like the one placed there during the Summer season. At the east side of the Sandreefy, a Floating Beacon, with one broom, tied upwards on a black pole, instead of the Nun Buoy, No. 1. At the South side of the Sandreefy, Floating Beacon, with three brooms tied upwards on a black pole, like the one placed there during the Summer Season. At the West side of the Holmetunge, a Floating Beacon, with two brooms, tied downwards, on a white pole, like the one placed there during the Summer season.

Rocks not laid down in the Charts. — Captain Nye, of the whaleship "Mount Vernon," furnished the "Polynesian" the following:

On my passage from the Bonin Islands to the Japan Sea, in April last, I passed between Pinnacle Island (lat. 29 44 N., lon. 130 10 E,) and Jakanosima. This passage has the appearance on the charts of being a safe and easy one; but there are two clusters of pointed and rugged rocks, of some thirty or forty in each, lying about midway of the passage, distance one mile from each other, and each cluster about half a mile long. They lay N. E. and S. W., directly in the track of vessels passing in or out. They are from five to forty feet above water, and are not laid down on any charts I have seen. I consider them dangerous rocks, more especially as many vessels will be going to the Japan Sea the coming season, and some may go through that channel. I will venture to say, from my own and others experience, that but little dependence can be placed in the charts of that part of the Pacific Ocean and Yellow Sea.

There has been a fog bell erected on the south end of Baker's Island, and one also at Race Point, Cape Cod. These bells will be rung by machinery, and will be in operation during the thick and foggy weather.

Department of State,
Washington, *January* 20, 1855.

Information has been received at this department, that there has been established at Ibo, in the Islands of Cape Delgado, a custom house, at which vessels of foreign nations may enter and clear, merchandise be discharged and shipped, paying the same duties, under the same regulations and restrictions, as in the port of Mozambique.

Whalemen.—On the 28th of August, and again on the 31st, four whale ships were seen from H. B. M.'s discovery ship "Plover," to the eastward of Point Barrow, lat. 71 21 N., lon. 156 W. One of them was boarded, and proved to be the Franklin, Captain Richmond, who said these ships had been induced to venture so far by the accounts of numerous whales seen in that part of the Arctic Sea, and further east, by Capt. Collinson, of the British discovery ship "Enter

prise." They had some success, but the whales were small. The sea north of the American continent has been more open this year than it was ever known to be before.

THE RAISING OF THE BLOCKADE OF RUSSIAN PORTS.

DEPARTMENT OF STATE,
WASHINGTON, *Jan.* 23, 1855

The following extract from the *London Gazette*, of Tuesday, Dec. 19, 1854, has been officially communicated to this Department, for the information of the public:

[*Notification.*]

"FOREIGN OFFICE, *Dec.* 19, 1854.

"It is hereby notified that the Right Honorable the Earl of Clarendon, her Majesty's Principal Secretary of State for Foreign Affairs, has received from the Lords Commissioners of the Admiralty a copy of a dispatch, dated her Majesty's ship 'Edinburgh,' Kiel, December 8, from Rear-Admiral Chads, commanding her Majesty's naval forces in the Baltic, informing their Lordships that the blockade of the Russian ports, undermentioned, had been raised from that date :—'Libau, Windau, Riga, and Bernau, and all Russian ports, roads, havens and creeks, from latitude 55 degrees 53 minutes N., longitude 21 degrees 3 seconds E., to Cape Dager Ort, in latitude 58 degrees 55 minutes N., longitude 22 degrees 5 seconds E., the ports of Hapsal, Warmso Islands, Port Baltick, Revel, and all Russian ports, roads, havens and creeks, from Cape Dager Ort to Eckholm Light, situated in latitude 59 degrees 43 minutes N., and longitude 25 degrees 48 minutes E. The ports of Helsingfors and Sweaborg, and all Russian ports, roads, havens and creeks, to the westward of Helsingfors, as far as Hango Head (inclusive,) in latitude 59 degrees 48 minutes N., longitude 22 degrees 53 minutes E.; the ports of Aro and Abo, and, lastly, the whole of the ports, roads, havens and creeks, eastward of Helsingfors, on the Finland shore, and Eckholm Light, on the coast of Esthonia, to Cronstadt and St. Petersburgh, both inclusive."

VINEYARD SOUND LIGHT VESSEL.—The Vineyard Sound Light Vessel having been repaired and refitted with new illuminating apparatus, will resume her station near the "Sow and Pigs," on or about the 15th instant (January.) She is painted red outside, with a white streak, and the words "Vineyard Sound" painted in large black letters on each side. The vessel is about 78 feet long and 24 feet beam; rail 7 feet four inches above water. She is schooner rigged; mastheads painted white, with a hoop iron day mark at each masthead, painted red. She is fitted with two lanterns, each containing eight lamps and reflectors, and will show her lights 29 feet 6 inches above the level of the sea. Masthead 46 feet 6 inches above the level of the sea.

By order of the Lighthouse Board.

We are informed, by reliable authority, that since the building of the breakwater at Richmond Island, that harbor has become one of the safest on the coast. Vessels falling into the westward of the Cape with an easterly wind, can easily make this harbor; and, if they are acquainted, they can obtain a pilot from the island by setting a signal. If the weather is so rough that the pilot cannot board them outside, he can board them inside the Western Point. They can go in with safety by giving the island a berth of a quarter of a mile, standing over about a third of the way toward Ram Island, then there is nothing in the way beating up to about half the way from the point to the bar, where they will find a safe anchorage, with the best of holding ground.—*Portland Argus.*

THE NEW LIGHT AT ST. AUGUSTINE.—On the night of the 2d inst., the old lights at the Light-house were replaced by one of the 4th order of Fresnel Lens Light. This light is fixed as heretofore, but varied by flashes, which are remarkably brilliant. The flashes occur once in three minutes.

KATTEGAT—LIGHT ON THE KOBBER GROUND.—Official information has been received at this office, that the Danish Government has given notice that the temporary Light-ship, stationed on the Kobber Ground, at the distance of 11 miles S. by

E. from the easternmost part of the Læso Island, has been removed, and a three-masted vessel, carrying a fixed light on each mast, has been moored in her place. Each of the three masts is surmounted by a ball.

The new vessel is painted red, with a white cross on her side, marked "Kobber Grunden."

The light on her mainmast is 41 feet, and the two others 29 feet above the surface of the sea.

The position of the vessel is at 3½ cables' lengths S.E. by S. from the South Beacon (Ny Vagar) of the Kobber Ground, in 4 fathoms, and in 57° 8′ 30″ N., and in 11° 20′ 30″ E.

WHALE'S BACK LIGHTS, ENTRANCE TO PORTSMOUTH, N. H.—Notice is hereby given, that on or about the first June next, (1855), the present lower light, exhibited from the Whale's Back Light House, at the entrance to Portsmouth harbor, N. H., will be discontinued, and there will be substituted at the same time for the present upper fixed light, a fixed light varied by flashes, of the 4th order of the system of Fresnel.

Due public notice will be given of the day on which the proposed change will take place, accompanied by a full description of the appearance of the light as it will be seen by the mariner.

LIGHTS AT CAPE ELIZABETH, ME.—Notice is hereby given, that on or about the first of June next, (1855), the present fixed light and the present revolving light at Cape Elizabeth, Me., will be discontinued, and at the time of the discontinuing of the two lights, a fixed light, varied by flashes, of the 3d order of the system of Fresnel, will be exhibited from the tower from which the present fixed light is exhibited.

The tower of the revolving light will not be removed, but the two towers will be left standing, as at present, to serve as a distinguishing mark of the locality by day.

Due public notice will be given of the day on which the proposed change will take place, accompanied by a full description of the appearance of the light as it will be seen by the mariner.

SHORT PASSAGES.

NEW ship Ocean Belle, belonging to Messrs. Weed, Welt & Co., Waldoboro', Me., sailed from that port Dec. 30, and arrived at the Balize of the Mississippi, 7th inst., having made the run in eight days and twenty-two hours, which is said to be the shortest passage on record from that section. The Ocean Belle is a medium clipper.

The ship Juniper, (of Philadelphia,) Pinckney, from Pernambuco, Dec. 22, arrived off Cape Henlopen, January 13, thus making the passage to Delaware Bay in twenty-one days.

The American clipper ship Typhoon, Capt. Samuel Goodhue, arrived at London, January 10, made the passage in the short time of 90 days from Calcutta. The same ship made the passage out in 80 days—thus making one of the shortest voyages out and home on record.

The clipper ship Witchcraft, arrived a few days since in 69 days from the Chincha Islands, via St. Thomas. She sailed from New-York on the 9th of May last, and arrived at San Francisco in ninety-seven days eight hours; sailed thence Aug. 28, arrived in Callao Oct. 8, performing the voyage in eight months and fourteen days.

The new brig Fannie Butler, built and mostly owned by Timothy Crosby, Esq., of Bangor, left Owl's Head, January 2d, and arrived at Havana, January 10th, making the run from land to land in six days. This is the quickest passage on record.

OCEAN DISASTERS.

AN INQUIRY INTO THEIR CAUSES AND REMEDY.

Report of R. B. Forbes, Caleb Curtis, *and* Cassius Darling, Esqrs.

To the Boston Marine Society:

Your Committee to whom was referred on the 7th November, the subject of Ocean Disasters and the want of discipline on board of merchant ships with a request to communicate with other Marine Societies, and to suggest remedies for these growing evils, and to report at a subsequent meeting, now have to report:

That, after a careful consideration of the whole subject, your Committee believes that the principal cause of the many disasters which have occurred during the past two or three years, has been the want of sufficient power, under the United States laws, to enable masters to maintain order.

Your Committee would not regret the abolition of the punishment of flogging with the "cat" or otherwise, had any sufficient substitute been provided by Congress. The effect of the abolition of corporeal punishment has been to convince seamen that no one has a right to enforce obedience in any shape: and cases constantly occur where they disobey important orders with impunity.

The natural consequence has been, in many cases, that ships have become disabled in their spars and sails, and have sprung a-leak and been abandoned whenever an opportunity offered to escape the extra labor of pumping.

If it was clearly understood that masters of ships would be sustained by the laws in enforcing prompt obedience in times of danger, and that any resistance to such enforcement would be punished as mutiny, the necessity for punishing *past offences* on board ship would not be so apparent as it now is.

There are, however, many causes operating scarcely less disastrously to

increase the losses at sea, some of which your Committee will briefly touch upon.

First among these is the fact, that most of our seamen, though many have American protections, are foreigners who have been accustomed to submit to coercion in some shape or another; they come to this country under the impression, which we regret to say has been encouraged by mistaken philanthropists, that they can do very much as they please in this land of freedom; they are quite aware that the master cannot raise his hand to punish *past* offences, and they scarcely permit him to raise his voice to enforce obedience. Men who have conducted badly during the voyage, are by masters and owners permitted to go unpunished on the arrival of the ship, while it often happens that sailors are instigated to seek redress of the captain and officers for real or imaginary complaints, and it often happens that money is thus extorted rather than to subject masters, and mates, and owners, to the inconvenience of undergoing the slow process of legal tribunals. In order to cure this growing evil, some new course of trial, summarily applied, is necessary.

The remedy your Committee suggest to cure the great evils attending the necessity for having so many foreign seamen, is to encourage young Americans to go to sea, by establishing floating schools, under the auspices of the General Government, the State Government, by municipal authority, or by contributions from those engaged in shipping. In these schools, young men should be taught the common rudiments of an English education as well as navigation, and also the ordinary duties of seamen. If young Americans should be thus encouraged, foreigners will not be so much wanted, and they would not require the restraint which is so necessary to insure obedience in this class.

Your Committee think that granting protections is productive of no good end, and should be discontinued, and that a substitute should be provided in the shape of a registry ticket, on which shall be endorsed the time of entry and discharge as well as the true standing of the seamen; and the law should strictly provide that no seaman, purporting to be an American, shall be received in any foreign port without his certificate being duly endorsed by the master or owner whom he last served.*

The system of advance wages also militates against the faithful discharge of duty by seamen on short voyages. Your Committee strenuously advocate a system of rewards for good conduct as well as punishment for evil deeds.

As matters now stand, the few thorough seamen found in our large ships suffer scarcely less than masters and officers by the ignorance and insubordination of the mass.

It is not rare to find only three or four men, in twenty or thirty, who may have shipped as "able seamen," who can steer the ship. The Captain should have the power, if he has not already, on exhibiting sufficient proof of incompetency, to cut down the rate of wages of those who may have shipped under false pretences.

Much more might justly be said on the great evils existing in the mercantile marine of this country, and much on the subject of the remedies to be applied; but your Committee feel that it would be an endless task to enter into details on this subject at this time.

Next to the want of power and the want of American seamen, comes the important fact that the vast increase in our tonnage, and the increased

* We think such a provision as the latter would open the door to very great abuses of seaman's rights, on the part of bad captains, for all the virtues that ought to be are not always found *abaft* the mast.—EDS.

size of our ships, causes the supply of seamen to fall short of the demand; hence ships go to sea short handed, and the larger portion of the crews are inefficient, inexperienced, and unworthy of the name of seamen. This want of knowledge of their duties is not entirely confined to the men before the mast.

As natural consequence of the supply being short of the demand many men are promoted to mates, and many of these are put in command of ships before they have by experience become fitted for these trusts.

When it is found, by an unfortunate concatenation of circumstances, that valuable ships are entrusted to incompetent masters, inefficient mates, and ill-governed crews, disposed to take every advantage of their physical power, the responsibility undergone by underwriters is indeed alarming, and your Committee regret to say that such cases are by no means of rare occurrence.

As a remedy for these evils, so far as seamen are concerned, the schools already suggested would be effective; and besides the early influence of these, the mates and masters should have the privilege, as in England and France, of being examined by a competent Board, who might certify to their knowledge of Navigation; those who did not choose to undergo this ordeal might abide by the natural consequences, which, in many cases, would be a want of confidence, and thereby want of respectable commands.

Next, in estimating the causes of disasters on the Atlantic Ocean, comes the hasty loading of ships by stevedores in foreign ports, whose principal anxiety is to get on board the largest quantity in the shortest possible time; and as most of these ships take steerage passengers in large numbers between decks, the weight of cargo is unequally distributed, the ship becomes very uneasy at sea, loses spars from this cause and from the want of good men, springs a-leak, and is finally abandoned whenever an opportunity offers, sometimes to be picked up and towed into port with three or four feet of water in her. Another prominent cause of disaster is found in the fact, that, as a general rule, ships are not provided with suitable compasses, nor are these always placed in proper situations as relates to iron steering gear, and other masses of metal. Very few ships have a standard and reliable compass placed where it is out of the influence of local attraction, which exists to a considerable extent in all sailing ships, and to a greater degree in steamers. Too much confidence is placed by modern navigators in that most useful instrument the chronometer, and the use of the lead is too often neglected, as well as the use of suitable lights during dark nights at sea, whereby ships are stranded and come into collision.

The recent surveys of the coast of Long Island, New-Jersey, Nantucket Shoals, &c., and the accurate sailing directions made under the auspices of the United States, are too often neglected, or not found among the charts, the result of which has been illustrated in the cases of the steamer Franklin, and the ship New Era, and many others. The careful use of the water thermometer is also neglected by many in approaching soundings, and may be put down among the minor causes of shipwreck.

Your Committee strongly urge the necessity for insisting on reliable compasses, properly tested, reliable leads, reliable lanterns, good thermometers, and a habit of using these with care. Lunar observations, as a check on a single chronometer, are most important, and, as your Committee believe, are generally much neglected.

When ship-owners come to appreciate the value of these auxiliaries to

safety, preferring to sacrifice a few hundred dollars of carving and gilding for them, the disasters of the sea will be materially lessened.*

The cause of humanity, not less than the interests of ship-owners and underwriters, calls for a reform in the number and size of boats in passenger ships, and especially life-boats; the majority of ships are inadequately furnished with this class of boats; they are seldom fitted to sustain a large number of persons, and are nearly always wanting in sails, compasses, water breakers, and other means for making them suitable vehicles in pressing emergencies, and the means provided for lowering boats are insufficient for safely putting them overboard, and are only adapted to do this in smooth water on ordinary occasions.

The remedy which your Committee suggest for a reform in this respect, is the enactment of a law whereby passenger ships shall be compelled to have boats or floats, sufficient to sustain, under ordinary circumstances, every soul on board, which, under the laws, they are now permitted to carry; and that ships shall have suitable lanterns to be always displayed during dark nights at sea, and suitable compasses, adjusted to counteract the effect of local attraction, also hand whistles to sound during foggy weather; † it is also important to encourage the use of fire annihilators, and lightning conductors. The false economy which generally prevails as to these means of safety should be made to give way to legal enactments by Congress.

Your Committee see no valid reason why sailing ships should be exempted from the shielding influence of the law as regards the safety of crew and passengers, while stringent laws exist as to their safety in steamers. Every sailing ship carrying passengers, should be provided with a "life car" to transport them through the surf in case of stranding; and the usual auxiliaries, as rockets and lines, for communicating with the shore, should also be insisted on in this class of ships.

Many lives have been saved on the coasts of England, as well as on the coasts of New-Jersey and Long Island, by "life cars," by lines thrown from mortars or rockets, and many more might have been saved had these means been provided on board ships as well as on shore; communication from a stranded ship to the shore may often be insured when the state of the wind and tide render it impossible or difficult to do so from the shore to the ship.‡

The influence of all "Marine Societies" should be strenuously exerted to introduce these instrumentalities for humane purposes. In summing up the causes of disasters at sea, and the remedies to be applied, your Committee would resolve the whole subject into the fact, that the risks of the sea are inadequately met by the rates of premiums, and this may be said to be one great cause of losses. The remedy, if this be true, is simple, and will be found in demanding higher rates of premium, and by making distinctions between well found ships, and others. This course would undoubtedly tend more towards curing the existing evils than any other course, short of stringent laws, by calling more general attention to these means for making ships more safe in order to effect a reduction in the rates of insurance. It is true that this mode of attempting to mitigate the evils complained of would sometimes bear unequally on those that already provide

* We hope the day is coming when the *ship*, itself, shall be a "life-boat," constructed to defy the engulphing seas, that now annually swallow up one tenth of the world's commercial industry. A ship never should have occasion to be abandoned.—EDS.

† A valuable machine turned by a crank, in use in England.

‡ In the case of the British barque Argyle, recently lost on the New-Jersey coast, the Government life apparatus on the beach *proved of no use*; hence the necessity of being provided *on board*.—EDS.

sufficient means, but your Committee consider these cases as forming the exception to the general rule.

Finally, in regard to Ocean Steamers, your Committee would strongly urge on all travellers by sea, instead of looking with so much care to the small matter of personal convenience for ten or twelve days, by selecting from the plan of the cabins the best berths, to call on the agents to exhibit the plan of the deck, showing the number and quality of the boats, pumps, fire apparatus, and the means, by proper station bills, for the efficient use of these auxiliaries of safety for their *lives*. Of what consequence can it be, to lack a little personal comfort for so short a time, compared to the safety of the lives of those on board, which are sufficiently exposed by running at full speed during fogs and in dark nights across a beaten track full of dangers.

Steamers, whether of wood or iron, should have water-tight bulkheads, a separate engine and separate boiler to work the principal pumps and fire hose, whenever it may be expedient to stop the main engines; and means should be provided to make the principal boilers subservient to floating a considerable portion of the weight of engines, coal, &c., in cases of extensive damage by collision or large leaks from other causes.

To enter fully into all the causes operating to make hideous the dangers of the sea, and to enlarge on the many remedies required, would fill a volume; your Committee have, therefore, only to submit the foregoing remarks and suggestions, with the earnest hope that the serious attention of ship-owners, underwriters and legislators, may be called to the prompt mitigation of these dangers, the effect of which is most unhappily illustrated in the ledgers of underwriters.*

Your Committee cannot take leave of the subject without calling your attention to the accompanying petition to Congress, circulated by the writer at the last session, which they recommend being presented to Congress with a copy of the present Report.

R. B. Forbes,
Caleb Curtis,
Cassius Darling, } *Committee.*

Boston, *December* 27, 1854.

DISASTERS AT SEA.

SHIPS.

2 Unknown ships at anchor on Bahama Banks, dragged ashore, cut away masts.
Wm. Wirt, Callao for New-York, went ashore near Cape Henry.
Helios, (new), at New-Orleans, from Portland, cut away masts to save ship.
Flying Eagle, at San Francisco, from New-York, lost main yard and fore-top-gallant mast.
Victory, at San Francisco, from New-York, sprung mast head, lost spars, sails, &c.
Belle, Wood, for Mobile, got ashore on the Tortugas Islands, Dec. 24.
Chili, at New-Orleans, from Trapani, much damaged in spars and sails.
Tingqua, 650 tons, Shanghai (China) for New-York, total wreck on Cape Hatteras.
Edward, at Baltimore, injured in a gale, Jan. 21, in the harbor.
Unknown, (large vessel) was passed Jan. 18, waterlogged and abandoned.
Magnolia, Callao for Hampton Roads, put into New-York in distress, vessel leaking, lost boats, spars, &c.
Unknown, (timber loaded,) was passed, Jan. 7, masts all gone.

* See the January number of the Nautical Magazine for an able article upon "Life-boat Steamers," also in the same number, a Review of the Steamboat Law of 1852, containing a complete exposé of the wants of steam navigation for safety.—Eds.

Sullivan, Charleston for New-York, got ashore 2 miles west of Fire Island Light, Jan. 21.
Agnes, Newport for Portsmouth, (Va.) got ashore on Breaksea Point, Jan. 8.
Young, Brandes, at Liverpool, from New-Orleans, was in contact with a steamer in December.
Blohm, New-York, in contact at Waterford, considerable damage.
George Canning, New-York, in Dec. 5, for Hamburg, is reported lost.
New World, New-York, was in contact with ship Lucy Thompson, at Liverpool, lost some spars, &c.
Wild Wave, Liverpool for San Francisco, put back with foremast sprung.
August, Cuxhaven for San Francisco, put back with loss of spars, sails, &c.
Agnes, at Cardiff, from Newport, got ashore near Breaksea Point.
Helen, in contact, off Point Lynas, with the Princess Victoria, the P. V. supposed went down with all hands.
Black Warrior, (whaler,) ashore near Sag Harbor, L. I. Jan. 21st.
Eliza Mallory, at New-York, from New-Orleans, lost bulwarks, &c.
Napoleon, at Boston, from Calcutta, struck a ledge of rocks in Boston Harbor,
Richmond, Boston for New-Orleans, got aground, on a bar, near Hospital Island, Jan. 26.
Aquetuck, for Valparaiso, ran ashore at Nuntijo previous to Jan. 12th.

BARQUES.

Empress, at Gibraltar, about 1st Dec. last, lost masts, &c., in a gale.
Mary Annah, Dec. 14, driven ashore on the rocks opposite Navy Yard Portsmouth, N. H.
Leo, Havana, at New-York, lost sails, bulwarks, rigging, &c.
Hiero, New-York for Cork, abandoned on the voyage, built 1849, 446 tons, value $20,000, insured.
Alvarado, from St. Domingo, making for a port in distress, lost sails, yards, and boats.
Chusan, from Africa, for Salem, got ashore at Marblehead Beach, Dec. 18.
Kilby, Cadiz for Beverley, put into Portland, leaking.
Thomas E. Baxter, Philadelphia for New-York, lost rudder, sails, &c.
Loretta Fish, Inagua for New-Orleans, total wreck on Bahama Reef, 247 tons.
Georgia, at New-York, from Dublin, had deck swept, lost spars and sails.
Elise, at New-York, from Hamburgh, heavy weather, stove boat, water-casks, &c.
James W. Paige, was spoken, lat. 87 20, lon. 64 33, leaking badly, had thrown cargo over.
Almedia, at New-York, from Apalachicola, Dec. 7, drifted ashore on Manzanilla Reef.
Georgiana, at Baltimore, from Boston, lost bowsprit and fore-top-ga llant mast.
Suwarrow, Sagua, for New-York, sprung aleak, lost sails, &c., put into Bermuda.
E. Corning, at San Francisco, from Batavia, had heavy weather, and much damaged.
A. B. Sturgis, (supposed) was signalled, south of Bermuda, in distress, Dec. 13.
Junita, for New-Orleans, in contact with brig Chicopee, for Boston, much damaged and both returned.
Eliza Thornton, San Francisco for Hong Kong, was wrecked.
Unknown, was seen by brig Borneo with loss of many spars.
Unknown vessel seen by brig Borneo with loss of bowsprit and fore-top mast.
Mary Adelia, at New-York, from Callao, lost sails, bulwarks, boat, &c.
Greenlander, at Charleston, from Liverpool, Dec. 29, was run into by unknown vessel.
Elizabeth Deming, New-York, for Rio Grande, put into Norfolk, Dec. 2, lost sails, spars, &c.
Unknown, of Belfast, was seen abandoned, lat. 47 15, lon. 21 50, complete wreck.
Gallego, Buenos Ayres for Chincha Islands, Oct. 23, towed to Montevideo for repairs.
Hangarian, Foo-chow-foo for New-York, Oct. 28,°at Singapore in distress.
A barque, bottom up, supposed the Jacob Hale, was seen near Ackland Island.
Tangier, at New-York, from Memel, sprung yards, lost sails, &c.
Swan, at New-York, from Lisbon, lost tiller in a gale.
Alvarado, St. Domingo for New-York, Dec. 6, lat. 34 16, lost sails, boats, &c.
Hiero, for Cork, abandoned on the voyage.
Leo, at New-York, from Havana, lost part of deck load, sails, rigging, &c.
Mary Annah, got ashore opposite Portsmouth, (N. H.) Dec. 14.
Behring, at Gibraltar for Boston, lost anchors, &c.
Empress, at Gibraltar, cut away masts to save vessel.
Scott Dyer, at Buenos Ayres, from Antwerp, lost anchors and cables, and went ashore.
Henry Kelsey, at Buenos Ayres, leaking badly.
Unknown, seen, lat. 28, lon. 62, waterlogged, about 500 tons, supposed the Neptune.
Flight, Savannah for New-York, Jan 17, got ashore on Rockaway Beach.
Cavalier (new), at Norfolk for Rio Janeiro, sprung aleak 40 miles from the capes.
Tremont, at Baltimore, from Pernambuco, got adrift, Jan. 21, slightly injured.
Equator, at San Francisco, from Manillia, encountered a typhoon, swept decks, lost sails, &c.
Restless, at New-York, from Carthagena, damaged in a gale in Caribbean Sea.
Sarah Bridge, New-Orleans for Baltimore, put into Bermuda in distress. leaking badly.
Howling Wind, Philadelphia for Londonderry, waterlogged and abandoned, Jan. 20.
Gulnare, St. Ann's Bay for London, put into Key West in distress, will be condemned.
Dorcas C. Yeaton, at New-York, from Hull, lat. 41 06, lon. 66 39, Jan. 13, lost spars, sails, &c.
Nazarene, New-York for Mantanzas, went ashore near New Inlet, L. I., Jan. 26.
Unknown, seen ashore, Jan 29, 3 miles below the woodlands, Fla.

BRIGS.

Gipsy, at St. John's, P. R. from New-York, Sept. 11, sprung aleak on passage, was condemned.
Tartative, at Philadelphia, from Calais, Dec. 3, much damaged in Gale off Cape Cod.
Pacific, Charleston, S. C., for Providence, sprung aleak, damaged in hull and spars.

Enterprise, Laguna for Boston, lost on coast of Mexico, 249 tons.
Fillhorox, at Baltimore, for Malaga, lost main topmast, and foretop gallantmast.
Maria, Bristol, R. I. for Havana, Dec. 5, lost sails and some spars, leaking 700 strokes per hour.
Grampus, from Boston for ——, lost some spars and sails in a gale.
Granada, at New-York, from Angostura, lost sails, &c.
Damer's Cove, Portland for Alexandria, sprung aleak and abandoned, 5 feet water in hold.
Water Lily, lat. 44 8, lon. 54, was fallen in with, abandoned, and total wreck.
Captain Tom, at New-York, from Falmouth, Jan., lost spars, sails, &c.
Hollander, St. Domingo city for Liverpool, Dec. 30, struck on a reef near St. Domingo.
Havana, from Bird Island for Baltimore, Dec. 16, dismasted in a whirlwind.
Coral, from Philadelphia for Boston, lost anchor and chain, and badly injured in the ice.
Two Ladies, from Port au Prince, Dec. 7, was wrecked on N. W. point of Inagua.
Unknown, Dec. 22, ashore on False Cape, below Baltimore.
Saginaw, of Gouldsboro, Dec. 14, got ashore at Nassau River, Florida, afterwards condemned.
F. B. Beck, Picton for Providence, Dec. 8, put into Halifax, lost one suit of sails, boat, and sprung aleak.
Unknown, (200 tons) was seen, Dec. 15, lat. 24, lon. 71, waterlogged and abandoned.
Triad, at Baltimore, from Eastport, lost deck load and stove bulwarks.
Tornado, from New-York, Dec. 11, grounded at Somerset Point, (Bermuda) not much damaged.
Lucy H. Chase, New-York for Mobile, lost sails, and all spars, except fore-mast, put into Key West.
Maloney, Philadelphia for New Orleans, Dec. 13, got ashore on Pickle's Reef (Key West).
Wacissa, New-York for St. Marks, lost sails, all anchors and cable, put into Key West.
Edwin, at Boston, from Cardenas, Dec. 22, in contact with barque Wyandott, sprung bowsprit.
Unknown, for Guilford, (Conn.) Dec. 15, ran on the bar at Falkner's Island.
Almira, at New-York, in distress, from Charlottetown, (P. E. I.) for Baltimore, cargo all damaged.
Neptune, Port-au-Prince for Boston, Dec. 26, struck on Edgartown Flats.
Nebo, New-York for Para, Nov. 9, wrecked at mouth of Para River.
Samuel Killum, Boston for Malaga, lost anchor and cable at Light House Channel.
Abeona, Satilla (Geo.) for New-York, Dec. 3, put into Charleston, leaky.
Isadore, at New-York, from Cardenas, Nov. 28, lost sails, cut-water, figure head, &c.
Borneo, at New-York, from Jacksonville, shifted cargo, &c.
Mary M. Rae, at Charleston, from Rio Janeiro, off coast of Brazil, lost spars and sails, &c.
Santa Clara, at Baltimore, from Eastport, lost sails and deck load of laths.
Arcturus, Darien (Ga.) for New-York, Nov. 31, lost fore-mast at the Delaware Breakwater.
Unknown, about 2,000 tons, seen 19th Nov., lat. 31 38, lon. 73 03, bottom up.
Noble, at Honolulu, damaged by random shots, from the allies, at Petropauloveki, in August.
R. M. Charlton, Savannah for Havana, Nov. 20, got ashore on French Reef, Key West.
Avon, dismasted in Gulf of Mexico, Dec. 10.
Flying Cloud, of New-York, went ashore at Aspinwall, Dec. 31, Captain and 7 men perished.
Wm. Price, at Pernambuco, in contact with ship Edward, Nov. 20.
Osceola, Philadelphia for St. Johns, (N. F.), Jan. 5, got ashore at Fenwick's Island.
Wacissa, at St. Mark's, from New-York, was ashore on Holt's Point, Dec. 28.
Unknown vessel, about 200 tons, was seen, lat. 39, lon. 71 30, dismasted.
Enterprise, Laguna for Boston, 249 tons, a total loss on coast of Mexico.
Pacific, Charleston for Providence, sprung aleak, damaged in hull, spars, &c.
Edward Lind, Curacoa for Portland, was spoken, lat. 39 10, lon. 68, leaking badly.
Grampus, Boston for Guano Islands, Dec. 14, lost sails and some spars.
Taratine, at Philadelphia, from Calais, Dec. 3, lost deck load, water-casks, boats, &c.
Gipsy, at St. John's, (P. R.) from New-York, sprung aleak, Sep. 11, afterwards condemned.
Filmore, at Baltimore for Malaga, lost some spars, &c.
Maria, Bristol (R. I.) for Havana, in a gale 6 days, lost some spars, &c., leaking 700 strokes.
Unknown, was seen, ashore on Brigantine Shoals, Jan. 10th.
Adelma, Laguna for New-York, ran into Charleston, Jan. 8, spars damaged, and leaking badly.
Wm. Price, Philadelphia for Pernambuco, in collision with ship Edward Colby, and was much damaged.
Foster, Frankfort for Boston, got ashore between Cape Elizabeth and Portland lights.
Lion, Cardenas for Portland, Jan. 13, grounded in Vineyard Sound, no damage.
Philura, at Baltimore, from Savannah, lost main-top-mast, sails, &c.
Gleaner, for New-York, at Norfolk, in distress, in collision, lost bowsprit, &c., leaking.
Mary Elizabeth, at New-York, from Cape Haytien, got ashore on Brigantile Shoals.
Frances Ellen (new), at Mobile, in distress, for New-Orleans, lost sails, &c.
Unknown, Dec. 28, shipped a sea, damaged cargo, &c., vessel on fire but not much injured.
Hollander, St. Domingo for Liverpool, totally lost on the St. Domingo coast.
Enterprise, was lost in January, while at anchor at Tabasco, supposed 2 lives lost.
Florence, at Vera Cruz, from Baltimore, in collision with a steamer, and condemned.
America, Philadelphia for Salem, in collision with unknown vessel, afterwards damaged in a gale, Jan. 22
Gen. Marion, Philadelphia for Boston, totally lost on Long Island, Jan. 20.
Bowditch, from Alexandria, got ashore at Freeport, (L. I.) and a total loss.
Lucy Ellen, Philadelphia for Boston, lost (L. I.), Jan. 21.
Maratina (new), Bucksport for Pensacola, total loss at Chatham, Jan. 17, crew saved.
Unknown, was seen, Jan. 18, 20 miles E. N. E. of Hatteras, with part of masts above water.
Georgiana, Alexandria for Boston, went ashore on Long Island, near Speonck, Jan. 23, total loss.
Jesusa, at Wilmington, (N. C.) parted her moorings and injured other vessels.
Isabella Reed, put into Bermuda in distress, Jan. 18, will be condemned.

Bloomer, Halifax for Boston, struck on Ram's Head, in Broad Sound, and bilged.
Sarah Vose, Gonaives for New-York, put into Nassau (N. P.), leaking badly, vessel much damaged.
Roswell, St. Johns (N. B.) for Jamaica, got ashore at West Quaddyhead, keel broken and berths started.
Empire, a total loss near Balize, Honduras.
Warren, at New-York, from Attakapas, lost bulwarks, started bulwarks, &c.
Telegraph, at Charleston from Mantanzas, lost sails, rigging, &c.
Elenor, Port au Prince for Philadelphia, stranded 43 miles N. of Fenwick's Island, Jan. 25.
Tartar, Charleston for New-Orleans, was lost on Pulaski Shoal, Jan. 6.
Molunkus, Cuba for Eastport, got ashore on Block Island, Jan. 29th.
Monticello, put into Norfolk, Jan. 23, leaking.
Waverley, at Boston from Mantanzas, lost part of deck load. Jan. 22, off Long Island.
Molunkus, Havana for Boston, went ashore S. W. point of Block Island, Jan. 28.
Linda, at New-York from Kingston, (Jam.) much damaged in hull and spars, and leaking badly.
Unknown vessel seen, in Great Egg Harbor, sunk, with one mast out of water, Jan 29.
Zanalla, Cardenas for Boston, got ashore opposite Patchogue, (L. I.) Jan 28.
Vermont, Charleston for Alexandria, put into Baltimore in distress, leaking badly, lost every thing on deck, Jan. 22.
R. D. Merriam, Savannah for Philadelphia, foundered near Ocracoke, Jan. 11.
Maria, at New-York, from Cape Haytien, lost sails, some spars, &c.
George Otis, at New-York, from Gonaives, lat 34, lon 77, West, lost sails, bulwarks, &c., leaking badly.
P. R. Hichborn, Belfast (Me.) for Matanzas, put into Boston in distress, sprung aleak, Jan. 27, lost deck load.
Titania, at Baltimore, from St. John's, (N. B.) lost part of deck load of laths.
Waccamaw, from Demarara, struck on a reef in Jeremie harbor, Jan. 7, and a total loss.
Harbinger, Jacksonville for Port Jefferson, Tortugas, ran upon Long Key, at Key West, Jan. 22.
Sheet Anchor, Mantanzas for Wilmington, put into Newport, Jan. 31, in distress, lost 1 man.
Gen. Taylor, Wilmington (N. C.) for Boston, totally lost on Cape Lookout.
Benj. Carver, at Portland, from Mantanzas, lost deck load of molasses, Jan. 26.
Unknown, (herm.) was seen, Feb. 1, dismasted and full of water, 12 miles N. N. E. of Race Point.
Amulet, at New-York, from Attakapas, lost sails, deck load and is leaky,
Unknown vessel, 200 tons, was seen, Jan. 30, lat. 34 06, lon. 74 07, full of water, foremast gone.

SCHOONERS.

Mary E. True, for Port-au-Prince, got on Tortugas Island, lost masts, bowsprit, &c.
Eastern State, of Salem, Dec. 10, got ashore at Linnekin's Neck (Me.), total loss.
Francis Newton, Boston for Jacksonville, Dec. 12, ran into Charleston, lost boat, sprung mast, &c.
Augustus, of Lubec, Dec. 8, got ashore near Lubec and went to pieces.
H. E. Parker, Baltimore for Trinidad, was spoken, had lost some spars, deck load, &c., and 1 man.
El Paso, Baltimore for Antigua, (new vessel,) Oct. 28, abandoned at sea, crew safe.
Frances Maria, Deer Island for Norfolk, Dec. 11, got ashore near Cape Porpoise and bilged.
Mary Clark, at New-York from Curacoa, Dec. 3, lat. 38 50, lon. 72, on beam ends, and lost deck load.
Olapeak, (spoken) North Carolina for Baltimore, lost galley-boat and some spars.
A. Hooper, Lubec for Richmond, abandoned, a crew placed aboard by bark D. Webster.
A large schooner, Dec. 14, ashore at Chatham Bars, (Mass.) soon got off.
Mary, Boston for Calais, Dec. 19, ashore at Cape Elizabeth, near Portland Light, total loss.
Empire, Boston for Balize, (Hon.) Dec. 1, lost near Balize, 163 tons.
Albert, from Bangor, went ashore below Boston and got off.
Roan, at Newport, from Jacksonville, lost some spars, and much damaged.
H. Atkins, Wilmington (N. C.) for Cuba, put back to Wilmington, Dec. 12, leaking.
Tiger, Boston for Providence, Dec. 19, got ashore at Newport, and sprung aleak.
Alfred Barrett, at New-York, from Wilmington, (N. E.) Dec. 4, had decks swept, and greatly damaged.
Isabel, Dec. 21, became a total wreck on Cape Island, (N. C.) crew saved.
James Ward, Boston for Richmond, got ashore near New-Haven.
Kingfisher, at New-York, from Gonaives, lost deck load, sails, &c.
Planter, of Dennis, Dec. 9, lat. 41 20 lon. 60 30, was fallen in with, in a sinking condition.
S. H. Townsend, at New-York, from Para, Dec. 15, lat. 35 50, lon. 73 20, much injured in a gale.
John T. Tardy, Attakapas for Baltimore, Dec. 11, ran into Key West, leaking 1200 strokes.
Henry, Norfolk for Providence, Dec 17, got ashore at Sandy Hook, put into N. Y.
Mary Emily, at Providence, from Charleston, split sails, &c., threw over 10,000 ft. lumber.
W. A. Spofford, New-York for Bay Port, (Fla.) sprung bowsprit, Dec. 10, put into Key West.
Moses H. Grinnell, (Pilot Boat,) Dec. 21, got ashore at Sandy Hook.
Hudson, from Boston, for Jacksonville, Dec. 11, lost sails, &c., put into Key West,
Orris Francis, Calais for New-York, Dec. 16, in contact with steamer in Long Island Sound.
Gen. Worth, loading at Bayport, (Fla.) Dec. 9, driven ashore at St. Martin's Reef.
Sarah Starr, at New-York, from Richmond, lost sails, bulwarks, leaking badly.
Moses Brown, sailed from Philadelphia, Nov. 30, not heard from since Dec. 3, supposed she foundered.
Maria, Boston for Bath, Dec. 22, vessel and cargo totally lost on Cape Neddick.
Unknown, Dec. 22, went ashore at Cape Neddick, female passenger lost.

S. S. Leonard, Aux Cayes for Boston, Dec. 25, put into Newport in distress, main-mast sprung.
Tempter, Attakapas for Richmond, in distress, Dec. 12, sprug aleak, making 1200 strokes per hour.
North Branch, Holmes Hole for Frankford, Dec. 18, picked up at sea, towed into Barrington (N. S.).
Atlantic, New-York for Salem, Dec. 22, got ashore at Cohasset, was abandoned and got adrift.
Planter, Boston for Richmond, Dec. 9, abandoned at sea, in a sinking condition.
Anthony Kelly, Dec. 57, got ashore on Flood Rock, Hell Gate.
Harriet, Portland for Baltimore, was in contact with a vessel early in Dec. and returned.
G. Russell, ashore at Hell Gate, near New-York, entirely under water.
Unknown, (or brig) a large one, was seen, Dec. 29, at anchor, off the Three Sisters, dismasted.
Amanda Powers, St. Pierre (Miq) for Boston, put into Salem, Dec. 28, lost boat and some sails.
Emma, Baltimore for Savannah, Jan. 2, lost main-mast, &c.
J. P. Nickerson, at New-York, from Port-au-Prince, on beam ends, and lost part of deck load.
Mount Vernon, Rockland for New-York, Dec. 29, struck on Watch Hill Reef and went down.
Mary Wesley, Baltimore for Providence, Dec. 26, put into Norfolk, lost main-boom.
Alice White, Boston for Baltimore; put into Savannah, Jan. 4, in distress.
Sarah D. Sparks, New-Haven, run into, at Hell Gate, Jan. 8, cut to water's edge and capsized.
Tempter, Dec. 27, at Key West, leaking badly.
Agassiz, from Baltimore, got ashore on Coast of Cuba, Dec. 26.
Sierra Nevada, got ashore on Humboldt Bar, in Nov. is a total loss.
J. Darling, at New-York, from Apalachicola, off Cape Hatteras, lost masts, &c.
Tennessee, Boston for Vanilhaven, totally lost on Pond Island, Dec. 30.
D. S. Mershom, at New-York, from Wilmington, (N. C.) lost part of deck load, Dec. 30.
Triton, about 1st Oct., was lost at Junk River, Coast of Africa.
Unknown, about 150 tons, was seen, lat. 39 20, dismasted and abandoned.
H. E. Parker, Baltimore for Trinidad, Port Spain, Oct. 20, lost 1 man, part of deck load, &c.
Mary E. True, for Port-au-Prince, struck on Tortugas Island, lost masts, bowsprit, &c.
Eastern Star, of Salem, total loss on Linnekin's Neck, (Me.) Dec. 10.
Francis Newton, Boston for Jacksonville, lost boat, sprung fore-mast, &c., Dec. 12.
Augustus, of Lubec, total wreck near Lubec, Dec. 8th.
El Paso, Baltimore for Antigua, abandoned at sea, Oct. 28.
Frances Maria, Deer Island for Norfolk, Dec. 11, ashore at Cape Porpoise Harbor.
Mary Clark, at New-York, from Curacoa, Dec. 3, lost deck load, &c.
Unknown, (large) ashore at Chatham bars, (Mass.) Dec. 14, soon got off.
A. Hooper, Lubec for Richmond, Dec. 8, abandoned, taken into port afterwards by another crew.
Olapeak, for Baltimore, was spoken, Dec. 10, lost boat, main-boom, &c.
Palmyra, of Halifax, went ashore at Bahia Honda, Dec. 5, afterwards condemned.
Lookout, Havana for New-York, was spoken, Dec. 31, with loss of main-mast.
Josephine, Tangier for Boston, got ashore on Absecom Beach, and bilged.
Silver Cloud, for New-York, run into by steamer State of Maine, and much damaged.
Unknown, was passed between Sandy Hook and Barnegat, in distress.
The fragments of a vessel, about 300 tons, were seen, supposed the Cohen of Portland.
James A. Bayard, Providence for Norfolk, put into Key West, in distress.
Magnolia, at Portland, from Baltimore, Dec. 30, lost some spars and sails.
Gen. Veazie, at Boston, from Philadelphia, was ashore at Cohasset, Dec. 13.
Margaret S. L. Woglam, for New-York, ashore 10 miles S. of Squam Inlet.
Kate Helen, at Key West for Martinique, lost part of deck load, &c.
D. L. Clinch, at Key West for Attakapas, lost sails, &c.
Manson, Jamaica for New-York, leaking badly, and in going into Bahia Honda, struck a rock.
J. A. Bayard, Norfolk for Providence, put into Key West, in distress, bowsprit sprung, &c.
Wm. Henry, taken in tow 35 miles from Sandy Hook, abandoned and full of water.
Rebecca, New-York for Turks Island, Dec 24, lat. 31 25, lon. 71 12.
Betsy and Deborah, Boston for Thomaston, totally lost, Jan. 16, at West Scarborough, (Me.)
Miranda, at New-York, from Curacoa, sprung aleak, lost sails, &c.
Pearl, Newbern (N. C.) for New-York, got ashore at Rockaway Beach.
Nymph, Sabine, for Galveston, was capsized in going over Charleston Bar.
Cora A. Lindsey, Newbern (N. C.) for New-York, Jan. 21, got ashore at Squam Inlet.
Deborah, Washington (N. C.) for New-York, struck a rock off Absecom, Jan. 21st.
Hetty Ann, sunk in Baltimore.
Mary Ann, got ashore in Chesapeake Bay, Jan. 21.
Abby Whitman, Savannah for Philadelphia, got ashore at Little Egg Harbor, Jan. 21.
Samuel E. Sawyer, Portland for Gloucester, went ashore in Pepperell's Cove, Jan. 22.
Alaric, of New-York, ashore at Barnegat.
Thomas J. Beckett, of North Carolina, for New-York, got ashore on Absecom Beach, Jan. 21.
Orion, Virginia for Fairhaven, in contact in N. Y. Bay, and damaged.
Fish Hawk, New-York for Eastward, got ashore near Madison, (Conn.) Jan. 22.
Jonas Sparks, Aspinwall for Mobile, put back in distress, Jan. 5.
Stephen Hotchkiss, was aground, on the bar, at Alvarado River, Mexico.
Mary Farnsworth, Franklin (Lou.) for New-York, got on a bar and much strained.
Unknown, 150 tons, was passed, Jan. 22, 12 miles S. E. of Chincoteague, bottom up.
Susan Cannon, Charleston for Baltimore, cut away main-mast, Jan. 23, off Cape Hatteras.
Boston, Philadelphia for New-York, ran ashore off the Ledges.
Rose Hall, Norfolk for New-York, struck on the point of Cape Henlopen, Jan. 28, lost sails.
Solomon Andrews, Charleston for New-York, went ashore on Ocracoke Shoal, Jan. 11.
Joseph Grice, at New-York, from Port-au-Prince, had cabin filled with water, &c.
North Carolina, went ashore on Hog Island, Gouldsboro' Harbor, Jan. 19.
Arno, at Bath, from Rappahannock, sprung aleak, lost spars, sails, &c., also struck by lightning.
Sharon, at Providence, from Baltimore, lost sails, &c.
E. S. Jones, at Philadelphia, from New-Orleans, stove boat, shifted cargo, &c., Jan. 21st.

LIST OF PATENT CLAIMS.

Steam Engine Valves: Charles Rumley, of Rochester, N. Y.

I claim the combination of the compound valve seat, consisting of an adjustable and a self-adjusting segment, with a rotating wing valve, revolving isochronally with the piston, substantially as set forth.

Rotary Engines: Charles Rumley, of Rochester, N. Y.

I am aware that the cylinders of rotary engines have been made of an elliptical form, to adapt them to revolving pistons, of varying radius, such as I employ; therefore, I claim neither the piston of varying radius, nor the elliptical cylinder; all I claim is making the internal curvature of such a cylinder, for such a purpose, to coincide with those portions of the lines of two or three intersecting circles of equal radius, and described from centres, occupying the relative positions described, which are exterior to the points of intersection, whereby the construction of an elliptical cylinder is greatly simplified, so that it may be bored with precision with an ordinary boring engine, as described.

Slide Valves for the Exhaust Steam: Henry Bates, of New-London, Conn.

I claim the employment, substantially as described, in combination with the usual slide valve, of a supplemental exhaust slide valve, C., to be operated by separate mechanism, to work over a separate series of parts, which are similarly arranged to, and communicate with, the same passages as the usual parts, for the purpose of giving a free exhaust till the termination of the stroke of the piston, and for enlarging the area of passage for the exhaust, as fully set forth.

Mode of Adjusting Vessels upon the keel blocks of Dry, Sectional, or Railway Docks: Horace J. Crandall, of East Boston, Mass.

I claim the manner in which the materials are arranged, for the purpose of holding vessels by the keel in a required place, in dry, sectional, or railway docks.

Method of Controlling the Log for Curved and Bevel Sawing: C. B. Normand, of Havre, France. Patented in England, October 27, 1852; in France, November 5, 1852.

I claim the mode of operation, substantially as specified, for directing the log or timber to the saw or saws in curvalinear sawing, by rollers or their equivalents, whose axis can be shifted at pleasure, as specified, to determine and vary the line of motion of the log or timber to the saw or saws, without the necessity of turning or moving the saw or saws laterally, substantially as described. I also claim mounting the rollers, which support the log or timber to be sawed in a swing or vibrating frame, or the equivalent therefor, substantially as specified, so that the plane tangent to the upper edges of the rollers can be placed at any desired angle with the plane of motion of the saw, and there retained, or gradually shifted in either direction during the sawing operation, whereby the log or timber can be sawed to any fixed and determined bevel, or to any bevel varying in any desired degree, as set forth.

Feathering Paddle-wheels: Fletcher Felter, of Perth Amboy, N. J.

I claim the combination of the cranked shafts, with the vibrating-rods and cam-shaped tracks in the wheel-house, whereby said partial rotation is obtained in a simple manner, as set forth.

Steam Boilers: D. B. Martin, of Washington, N. J.

I do not claim vertical tubes in boilers, connected with water spaces above and below, except under an arrangement like that set forth, viz: where the lower water space is immediately over the fire, and the draught of the furnace returns over said space and among the tubes, as set forth. That is to say, I claim the arrangement of the series of tubes placed vertically, or nearly so, between an upper

and a lower, and connecting vertical water spaces, when said lower water space is made directly over the fire chamber, and the draught is returned over said lower space and among the vertical tubes, in the manner set forth.

Windlasses: Henry Richards and Charles F. Windsor, of Boston, Mass.

We do not claim a cam at the end of a capstan or windlass, as that has been used before; but we claim the screw detached from the windlass, and encircling it, by which the cable is caused to fleet itself, by the turning of the windlass in heaving in.

Machinery for making Rope and Cordage: Arad Woodworth, 3rd, of Boston, Mass.; and George Chamberlin, of Olean, N. Y.

We claim, first, the arrangement of the bevel gears, or their equivalents, with their guiding holes, for conducting each thread arranged outside of the centre of the said gears, as set forth, whereby a draught is created upon each thread separately, and the threads in the several spool frames are prevented from being twisted or formed into strands, until they are all brought together, and drawn out of the last spool frame, as stated.

Second. We claim giving the strands, after they are formed, a revolution at the same time, and in the same direction that the laying up machinery revolves, by means substantially as described, for the purpose of preventing the twist first given from being partially lost or taken out by the process of laying them up, by which each strand retains the same amount of twist that was imparted to it by the twisting machinery, thus forming an even and hard twisted rope.

For lubricating the Cylinders of Steam Engines: John Absterdam, of Boston, Mass.

I claim placing the lubricating reservoir remote from the boiler, and interposing between the oil and the boiler, water, air, or other substances which will communicate the pressure from the boiler to the oil, and thus keep the oil from being heated, and yet feeding it to the surface to be lubricated by the pressure from the boiler, as set forth.

Packing Slide Valves in Steam Engines: D. B. Martin, of Washington, N. J.

I claim the mode set forth, of packing balanced slide valves, the same consisting in the attachment of the packing to the bonnet of the steam chest, whereby I am enabled to adjust the packing while the engine is in motion, all substantially as set forth.

Steam Boiler Alarm: Patrick Clark, of Rahway, N. J.

I claim, *first*, the arrangement of the wheel R, turning on the screw of the tube C, with its rods SS, and cap O, or any equivalent device, when actuated by the spring Y, or its equivalent, in relation to the valve stem F, and valve E, and the tube C, by means of which the arrangement adjusts itself to the varying length of the tube C, as it contracts in cooling, after having given an alarm, or after having been used as an ordinary gauge cock.

Second, I claim the arrangement of the bell H, and disk G, on the valve stem of the valve of the whistle, when, and only when, such arrangement is used in combination with the arrangement of the first chain for the purpose set forth.

Reefing top-sails: H. J. Crandall, of East Boston, Mass.

I claim the arrangement of the rod with the leaders on the under side of the yard, and the manner of reeving the reef lines, and pennants attached to the close reef through the leaders connected with the other reefs, and the connecting the reef points with the leaders for the reef lines, on the after side of the rail, and the peculiar arrangement together of the afore-mentioned parts.

Steam Boilers: J. A. Roebling, of Trenton, N. J.

I claim the arrangement of the extended grate surface, elaborating, or central combustion chamber, CC, the tube sheets, V and T, and the tubular water surface between the said sheets, substantially as set forth.

Commercial and Financial.

THE SIX DAY STEAMER.

We had hoped, (and with good reasons we think), that this vessel, of which so much has been said in the commercial circles of both the Old and New World, might be allowed to speak for herself, by the performance of a voyage across the Atlantic, and we thus be relieved of the necessity of adverting to ourself, in a matter in which the world has seemed to take so much interest. We enter upon the narration of the circumstances which gave rise to her construction, and the subsequent description of the vessel in connection with the principles involved, with reluctance, and are driven to the task from sheer necessity.

Immediately after having completed the plans and specifications for the large passenger steamers, published in Vol. I. No. 5, of the Nautical Magazine, the senior editor was called upon by William Norris, engineer, of Philadelphia, to design and construct several boats, and some frame work for machinery; at the completion of which, he desired us to make an investigation of what would be the smallest size steamer that could make a safe voyage across the Atlantic, from New-York to Galway, or Milford Haven, in the shortest possible time, consistent with the expenditure of a given amount of money in her construction and equipment.

In due time he was informed of the result, which did not fully meet his expectations, and farther investigations were proposed, under different conditions; these were duly analyzed, modified, and submitted, when it was believed that the desired object might be obtained, which was, that with a mean draught of water of 7 feet, the ocean might be crossed within one week. The distance from Sandy Hook to Galway Harbor, or to Cape Clear, by Cape Race, being 2,730 miles, requiring an average speed of 16¼ miles per hour; or, by coaling up at St. Johns, Newfoundland, in fine weather, the Eastern passage might be made in six days, at an average speed of 19 miles per hour, for the whole run.

Upon the foregoing conclusions, it was determined to build the vessel; and the funds necessary for the same were to be furnished by Mr. Norris, we giving the subject our entire attention, and having the entire control of the mechanical department, while the financial belonged exclusively to Mr. Norris; and in the consummation of results, if any loss accrued, Mr. Norris was to bear it; and if the enterprise proved profitable, the proceeds were to be divided equally. With such an agreement, and under such circumstances, the enterprise was begun, and the construction of the vessel progressed steadily, until she was nearly ready to launch, when the failure of Mr. Norris rendered it necessary that we should not only abandon all hope of remuneration for our services, to save the workmen from loss, but to advance our own funds to accomplish this purpose, yielding our claims to the vessel to save her creditors from loss. The vessel, as a consequence, was sold under the hammer, to a party who had neither the foresight, nor the means to consummate an enterprise of the first magnitude, although it was clearly demonstrable that the vessel was adapted to that purpose only as an ocean steamer, and could not, without hazard, be transposed to any other; and, after having had repeated solicitations from the party who purchased, to maintain our position, and prepare her for other purposes than those for which she was intended, we respectfully declined accepting, and have since manifested no farther interest in the vessel than that which involved the safety of human life and our mechanical reputation, abiding our time to write her history, and observe her fate.

Whether the noble experiment, which this vessel was intended to make, in reducing the time of ocean transit to Europe, deserved to fall so ingloriously to the ground, is a matter that we leave to the dispassionate consideration of those who were able to have intercepted the result, and secured an object so rational, so worthy, and within the reach of American enterprise.

The engraving, representing this vessel at sea, is in strict conformity with the model and plans, and exhibits the result of sustaining a vessel by the middle of length rather than the ends, which is the main cause of pitching or divergence from the horizontal position. We shall give a detailed description of the vessel in the next volume.

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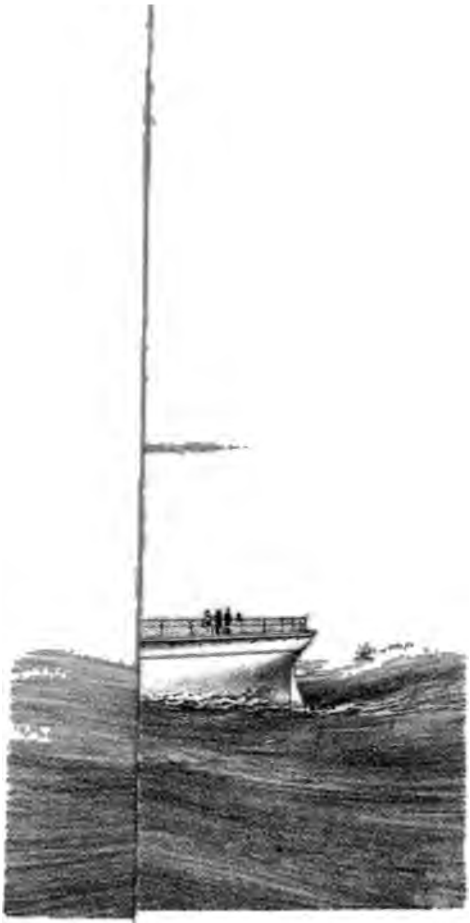


LAUNCHES FOR THE PAST MONTH IN THE U. S.

At Eden, Me., brig Alma, 294 tons.

At Round Pond, Bristol, Me., a ship of about 900 tons, called the Sparkling Sea.

In Bath, 15th instant, a ship of 600 tons.

At Alna, by Col. Dennett Weymouth, a ship of about 1,100 tons.

At Edgecomb, a ship of about 1,200 tons, called the Chicago.

At Northport, L. I., a schooner of about 250 tons, called the Blackbird.

At New-York, the fine ship Elwood Walter, from the yard of Mr. Thomas Stack, foot of North Second Street. The vessel is 136 feet long on deck, 36½ feet beam, 22 feet deep, and about 1,200 tons measurement. She was built for Mr. John B. Sardy and others.

The clipper schooner North Point, 350 tons burthen, for Johnson & Lowden, was launched from the yard of Lawrence and Fowlkes, Williamsburgh.

At Kennebunk, by Messrs. D. & S. Ward, a bark named E. B. Horn, of about 450 tons.

At Bath, by Mr. Johnson Rideout, a ship of 1,400 tons, called the Ironsides. She is said to be a ship of uncommon strength.

At same place, by Messrs. Trufant, Drummond & Co., a ship of about 1,100 tons.

At Phipsburg, Me., by Mr. C. Vinot, a ship of 600 tons, called the Cortez.

At Kennebunk, by Messrs. D. & S. Ward, a superior single decked bark of about 450 tons.

At Wiscasset, ship Tamerlane, of 950 tons.

At Bristol, R. I., a freighting bark of 400 tons.

At Mystic, a clipper ship of about 1,600 tons.

At Newcastle, Me , a three decked ship. She has not yet been named.

At Franklin, a bark of 375 tons, called the F. S. Means.

At East Boston, a ship of about 1,200 tons, not yet named.

At the same time and place, by Mr. Donald M'Kay, the clipper ship M'Kay.

At India Point, a bark of about 600 tons, called the W. A. Platineus.

At Rockland, Feb. 1, from the yard of C. & N. Dyer, a very superior freighting ship of 1,200 tons, called the Oliver Jordan. The ship has an entire white oak frame and wales,,and planked with hard pine. For model, strength, fastening, and finish, she will compare favorably with any ship built in the State.

At Bath, 22d, a ship of about 1,100 tons. No name.

At Lincolnville, a ship of about 650 tons. The name said to be given to this ship is Simoda.

At Newcastle, Del., a schooner of 340 tons, called the Bennet Flanner.

At Bristol, R. I., a freighting ship of about 800 tons burden, called the Escort.

At West Harpswell, a half clipper ship of about 650 tons.

At Sullivan, Me., a ship called the Alma.

At Bath, a ship of 1,200 tons, called the Pleiades.

At Bristol, a bark about 400 tons burden, called the Esperanza, intended for the Cuba trade.

At the same place, another bark of 400 tons, called the Ocean Favorite.

At Bristol, R. I., a brig of 318 tons. Name not stated.

At Baltimore, a clipper schooner of 250 tons burthen, built for the West India trade.

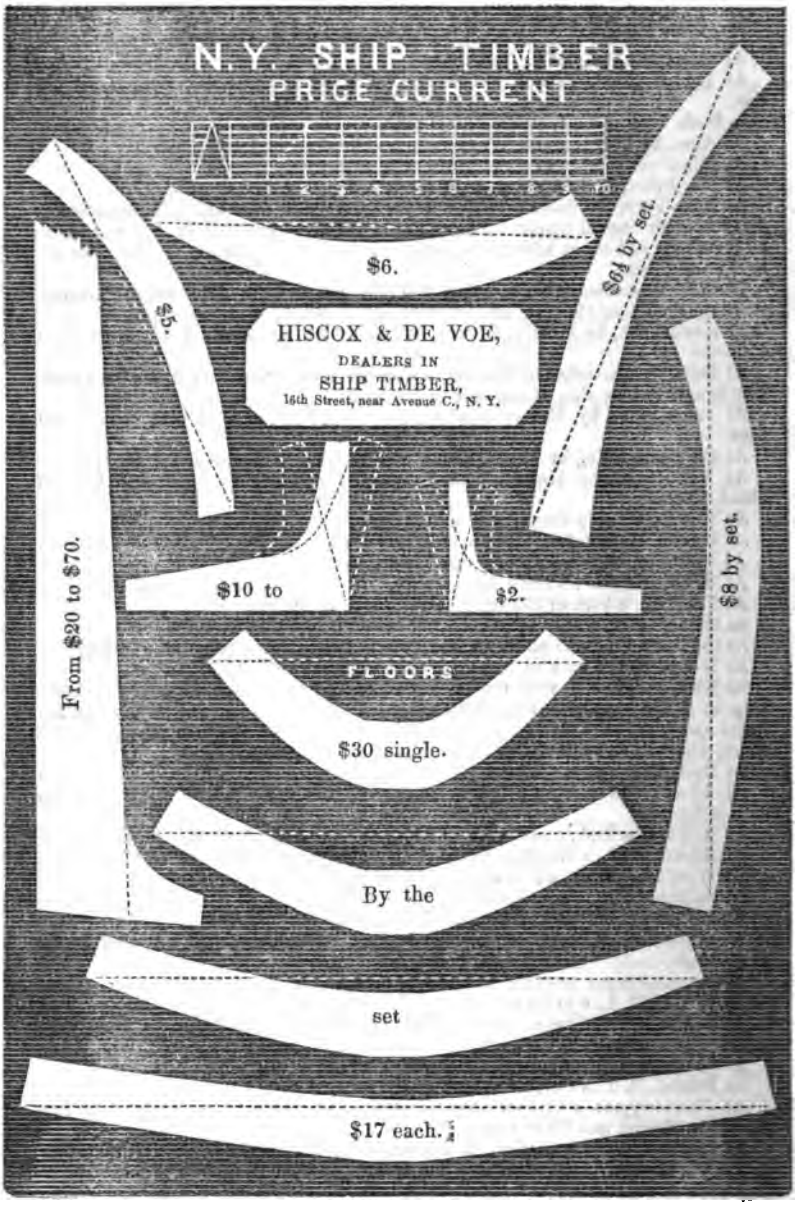
At Tremont, a brig of about 225 tons, called the William Heath.

At Bristol, R. I., a freighting bark of 408 tons.

At Newburyport, a clipper ship of about 1,050 tons, called the War Hawk, owned in Boston and New-York.

At Chelsea, by Mr. Stetson, a medium clipper ship of upwards of 1,300 tons, called the Beacon Light, owned by the builder, and intended for a general freighting ship.

At Stonybrook Harbor, L. I., a schooner of 500 tons burthen, called the Tanner.



A set of floors and futtocks, $9 each piece. Flitch timber, 30 to 35 cents per cubic foot; oak plank, $40 per M.; deck plank, $30 per M.; hackmatack timber, 25 cents per cubic foot; chestnut, ditto; cedar, 60 to 75 cents; yellow pine timber, rough, $25 to $35; ditto, sawed, $30; yellow pine plank, $30 per M.

KNEES.—Oak, 5 inch, $3 each; hackmatack, $1.50; oak knees, 6 inches, $5; hackmatack, $3; oak knees, 7 inches, $7; hackmatack, $4.75; oak knees, 8 inches, $10; hackmatack, $7; oak knees, 9 inches, $12; hackmatack, $9; oak knees, 10 inches, $15; hackmatack, $10; oak knees, 10 to 12 inches, $15 to $20; hackmatack, $11 to $12. Locust remains as quoted in November last.

EDITORIAL NOTICES.

Practical Navigation.—We had occasion, on page 59 of this volume, to call the attention of ship-masters, and all who aspire to be such, to a work then in progress, the labor of Capt. William Thoms, who for more than a quarter of a century has been in command of merchant vessels, and at the date of our notice, a teacher of navigation in this City. We regret to learn that by his intense application he became a martyr to the interests of Practical Navigation, and ended his labors on this volume with his life. The sudden release from eighteen consecutive months of intense application and painful study, was too much for his shattered physical powers, and the reaction of his mental energies sundered the chords of life, and his demise was the consequence. He has, however, not lived in vain, but has left his mark both on sea and land.

His Practical Navigator, a quarto volume of near 450 pages, has just appeared, and is profusely illustrated by diagrams, and will not fail, we think, to be appreciated by the maritime interest; and mariners will seek to obtain a volume from which so much may be learned of Practical Navigation and Nautical Astronomy, in expositions fairly within the reach of ordinary minds. The sailings are here explained by diagrams, avoiding the more complex problems of geometry and trigonometry, in connection with the tables of logarithms, which are seldom, if ever, used at sea, even by those who have studied, and are familiar with the subject. Tables of reference are also avoided as far as practicable, by inserting the names of the parts of the diagrams directly against them.

Diagrams are also used to show the contraction of the meridians toward the poles, and the comparative length of the degrees of longitude in the various parallels of latitude. The rules of practical current sailing at sea have not been omitted, and, in a word, we might say, that the volume abounds with useful rules, presented and illustrated in the simplest form; and inasmuch as the generality of seamen cannot spare a sufficient amount of time when on shore to devote to the study of the most useful works, or to place themselves under the instruction of competent teachers, the author has provided a volume, replete with such information as will lead the student, step by step, from the lower to the higher branches of the science, and embracing everything that is required to make a good practical navigator; hence we anticipate the speedy sale of a large edition of the work.

The Geographical and Commercial Gazette, is the title of a new monthly publication, issued for the proprietors: By J. Disturnell, 207 Broadway, New-York.

The Gazette began with the New Year, and, as its title indicates, is devoted to Physical, Commercial, and Political Geography. It is edited by

an association of practical and scientific gentlemen; and each number is accompanied by a map, illustrating some interesting portion of the globe, in connection with an article upon the geography of the same.

Until within a recent period Physical Geography was scarcely recognised as a distinct science, or felt to possess any striking importance in connection with the advancement of the popular mind. But the march of progress in developing commercial relations with the farthest corners of the earth, has brought us to the threshold of a department of knowledge which every intelligent man should enter, and court acquaintance with its treasures.

The Geographical Gazette appears well adapted to cultivate a popular taste for the study of this interesting science; and by supplying a monthly table of fresh information upon its peculiar topics, will become a useful and instructive serial. It is the only work of the kind in America. Terms—$2 per annum.

THE SECOND VOLUME OF THE NAUTICAL MAGAZINE.

With the present number, the First Volume of the Nautical Magazine is completed. Our enterprise is now fairly before the public, yet there are thousands in the United States who have not yet examined our pages, or reflected upon the beneficial results which may be accomplished by sustaining such a periodical.

Before the advent of the Nautical Magazine, there were few who had estimated the usefulness and value of such a publication; and it is not a little gratifying to learn, through numerous communications from our subscribers, that they heartily approve our efforts, and are resolved to co-operate with us, in sustaining a press, exclusively devoted to the interests of the ship-yard and the ship.

It has been our province to point out, in a humble manner, several important reforms, or improvements, which we shall follow up in the succeeding volume; and shall likewise add to their number from time to time. We have also proposed to enlarge the second volume to 96 pages, and shall continue to furnish engravings to enrich the work, with the expectation that the public appreciation will prove fully commensurate with the increased cost. But we have a word to say to our friends at this juncture.

We require the aid of every reader of the Magazine to extend its circulation, and introduce it where it is still unknown. For this friendly service they will be amply repaid, by improvements in the Magazine, which this augmentation of our support will enable us to make. We also desire to hear frequently from our readers, upon every subject of interest to them and the commercial fraternity. Give us your hand and pen, friends, and we will make the Nautical Magazine all the most sanguine and exacting can wish. We shall issue a larger edition with the forthcoming volume, and be fully prepared for any number of subscribers who may come forward. Come on, then, friends. Let us be enabled to supply one of the finest periodicals of the age, which shall be alike an honor and a credit to readers and proprietors.